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ABSTRACT

As an evolving program of action research, this Project for Adult Literacy focused on the complex problems of adult illiteracy and its mitigation in a major urban community (Boston, Massachusetts). It was undertaken to teach reading; assess the use of volunteers in adult literacy education; evaluate two reading methods for use with adult illiterates voluntarily studying in a community setting; and gather and communicate basic knowledge on illiteracy, adult illiterates, and program organization and administration. Much attention was given to analyzing statistical data on student and volunteer tutor backgrounds, student attendance, reactions to training, results of reading and related tests, reading progress at three stages, and factors assumed to have inhibited prior development of learning skills. A major finding was that Reading in High Gear and the Approach of the Massachusetts Council for Public Schools (MCPS) had similar shortcomings, but that the varied materials of the MCPS system permitted greater flexibility for experimentation toward meaningful change. (The document includes 121 tables and figures, measurement instruments, cross tabulations, and an extensive bibliography.) (LY)

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TEACHING ADULTS TO READ: RESEARCH AND DEMONSTRATION IN A PROGRAM OF VOLUNTEER COMMUNITY ACTION

A Report of the Project for Adult Literacy

Massachusetts Council for Public Schools, Inc.
Boston, Massachusetts

March, 1969

AC006 746

MASSACHUSETTS COUNCIL FOR PUBLIC SCHOOLS, INC.

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Boston, Massachusetts 02116

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ED039417

TEACHING ADULTS TO READ: RESEARCH AND DEMONSTRATION IN A PROGRAM OF VOLUNTEER COMMUNITY ACTION

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"For the first time in the history of mankind, man has the means and the technical knowhow which make it possible to erase poverty and illiteracy from the face of the earth."

...Chief Simeon Adebo, Director
United Nations Institute of Training
and Research

Address at Eighth World Conference
Society for International Development
March, 1966, New York, New York

"It's a whole new world...that's all. A whole new world..."

...A student
Comment on his progress
Project for Adult Literacy

"It seems to me that our students, in being unable to read, are as handicapped as a blind person. They live in fear of not being able to react as others expect. The problem is with them all the time and it enters into everything they do. There is no escape from being unable to use the printed word.

...A teacher
Addendum to his weekly report
Project for Adult Literacy
Boston, Massachusetts

MASSACHUSETTS COUNCIL FOR PUBLIC SCHOOLS, INC.

16 ARLINGTON STREET, BOSTON, MASSACHUSETTS 02116 COPLEY 7-2176

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July 29, 1969

Dr. Gerson Green
Director
Research & Demonstration
Office of Economic Opportunity
1200 - 19th Street, N.W.
Washington, D. C.

Dear Dr. Green:

We transmit with this letter the final report of the Project for Adult Literacy. It was carried out in the Greater Boston area during the period April 1, 1965 through April 30, 1969 by the Massachusetts Council for Public Schools, Inc. with financial support from the Office of Economic Opportunity, and from June 1, 1968 with supplementary assistance of the Massachusetts Department of Education employing grant funds from the U. S. Office of Education.

While the findings and recommendations of the report speak for themselves we want, in this letter, to emphasize the importance to our Nation of the continuance of a determined attack on adult illiteracy through sound research and well organized practice, both within educational institutions and in the larger community. Many of the most pressing of the social and economic problems of urban America are made more intractable by the existence of a large population in our cities with extremely limited or non-existent, reading skills. Yet, as the experience in this project clearly demonstrates, the tools for effective change are still crude and await much needed further research and administrative experimentation.

We are grateful for the opportunity to have been a part of the national attack on poverty and limited education, through our work on this project. We are confident that our findings can be useful to others in many ways and urge that they be given wide dissemination and critical review.

Sincerely,

Annette B. Krebs
Annette B. Krebs
Director
Project for Adult Literacy

Charles P. Harris
Charles P. Harris
Executive Director
Massachusetts Council
for Public Schools, Inc.

Graham T. Winslow
Graham T. Winslow
Chairman, Board of Directors
Massachusetts Council
for Public Schools, Inc.

cc: Dr. Derek Nunney
Office of Education

Mr. Rene J. Bouchard, Jr.
Mr. Bruno Ciccariello
Massachusetts Department of Education

PREFACE

This is a report of the Project for Adult Literacy, a research and demonstration project carried out in Boston by the Massachusetts Council for Public Schools, Inc., a private non-profit organization, with financing provided principally by grants from the United States Office of Economic Opportunity.

This project grew out of an earlier, privately funded effort of the Massachusetts Council--the Adult Literacy Project--which by 1964 already encompassed many of the features which later were to become elements of national anti-poverty programs. The Adult Literacy Project was serving adults who were functionally illiterate and who came voluntarily for training in community centers, most of which were located in poverty-stricken areas of the city. It was recruiting and training volunteers to augment a small teaching staff and tapping varied community resources for help in the undertaking. Thus, even before many Federal programs in the field were launched, the Boston program was accumulating operational and educational experience in a relatively uncharted field of basic educational need.

In April, 1965, a research and demonstration grant was awarded to the Council by the United States Office of Economic Opportunity, calling for expansion of the program operationally, for trial of a programmed method of reading instruction, and for a program of varied action-research conducted through a unit originally based at Brandeis University in Waltham, Massachusetts.

During the years in which the Project for Adult Literacy and its antecedent project have been in operation, the nation's awareness of the scope of the problem of adult illiteracy has increased and so have estimates of the numbers of adults in the United States who are handicapped in this way. However, still relatively lacking is a concerned understanding of the plight in today's society of the individual who cannot read and write at a functionally literate level.

Early reports from the work of the original grant period made explicit the complexity of the undertaking, and delineated the major problems which have subsequently been recognized as common to such enterprises. These were followed by a new grant from the Office of Economic Opportunity in May, 1966, calling for the continuation of the teaching and for as many as were feasible from a list of additional research and demonstration activities recommended by the Project.

In May, 1968, just at the brink of a restive summer, as the demonstration phases of the second grant were drawing to a close, a special pilot project grant was awarded under Title III, P. L. 89-750, by the Department of Education, The Commonwealth of Massachusetts. This grant permitted continued operation of the community literacy centers during a crucial period, and continued collection of action-research or demonstration data from faculty observers. At the same time analyses and reporting of the statistical research data already obtained went forward.

The bulk of this report presents analyses of statistical data regarding the students' demographic characteristics, their attendance in the program, reading progress, reaction to training, and factors assumed to have inhibited the prior development of their reading skills. Other analyses center around the employment of volunteers in tutoring activities and the use of the teaching methods assigned to the Project. On the whole, operational aspects of the program, defined and treated more fully in previous reports, have not been reemphasized herein. However, they remain as critical factors in the success of any such undertaking because, as the incidence of adult illiteracy in our nation has increased, so has the necessity of using volunteered community resources of many kinds to alleviate this problem.

The fundamental task in this project has been the fusing of widely disparate resources and objectives in a constructive, cooperative effort while carrying out systematic observation and documentation of the process. In human terms the task has been soliciting and coordinating the efforts of hundreds of private individuals and groups from educational, governmental, industrial, ethnic, religious, civil rights and communications organizations to study and mitigate a basic educational handicap for others. For many, this handicap limits drastically their ability to partake of other training opportunities as well as their self esteem and their fullest participation in society.

We wish it were possible to acknowledge individually the contributions of the thousands who have made this enterprise in Boston a success through their time, effort, enthusiasm and support, but this is not practical and we are constrained, in the acknowledgements which follow, to mentioning only a limited number of persons and organizations.

We wish to convey our deep appreciation to the local host organizations for the provision of facilities and services for the Project's literacy centers in their communities. A list of these centers appears in Appendix K.

We wish to thank also the officers and staff members of the many different community organizations in the Greater Boston area, whose interest and cooperation was so important in communicating to prospective students and volunteer assistants, the opportunities offered by the Project, and in assisting in many other ways.

A special acknowledgment is due Dr. Sanford L. Kravitz, formerly Chief, Research and Program Development Branch, Office of Economic Opportunity, for his perspicacity in early recognition of adult illiteracy as a basically limiting educational problem in the reduction of poverty, and for his leadership in instigating research of a broad nature across the field, in this and other projects supported by OEO.

We wish also to express our appreciation for the support of other officers in the Community Action Program of OEO within whose bailiwicks this project subsequently was administered: Mr. Ronald Shilen, Dr. John C. Muntone, Mr. J. Gerald Fitzgibbon, Miss Catherine Rozendaal, Mr. Rudy Frank, and Dr. Gerson M. Green.

We are grateful for the encouragement given to our work by Mr. Sargent Shriver, formerly Director of the Office of Economic Opportunity, and for the interest of Mr. Harold Howe, II, the former U. S. Commissioner of Education. We appreciate also the concern for the Project's demonstration and research activities manifested by Dr. Derek Nunney of the U. S. Office of Education.

We are indebted to Mr. Rene J. Bouchard, Jr., Director, Bureau of Civic Education and to Mr. Bruno Ciccariello of The Commonwealth of Massachusetts, Department of Education for their sustaining interest. We wish to express also our appreciation for the attention of Mr. Carroll F. Towey, Program Officer, U. S. Office of Education.

The principal load of expert research advisory service was carried by Dr. Ricardo B. Morant, Chairman, Department of Psychology, Brandeis University, who served throughout the government projects as Chief Research Consultant. Senior research staff members assisting Dr. Morant were, originally Dr. Milton Budoff, University of Massachusetts, and subsequently Dr. Melvyn Schnall of Brandeis, and Dr. Joel Friedman, Director of the North Suffolk Mental Health Center.

Dr. Lyra Srinivasan, independent consultant on educational development and research, and formerly Social Affairs Officer, Community Development Section, United Nations, ably bridged educational, research and administrative areas of the Project with her varied contributions. Mr. Stanley D. Weinstein, also an independent consultant, made substantial and similarly varied contributions in the Project's activities.

During different periods, the complex problems of project operations and their documentation were expertly shared by Mrs. Joan Blackett and Mr. Edward J. McCarthy.

Credit is due Mr. Charles Drake and Mrs. Edna Koretsky Warsowe for their early initiative in conceiving and organizing the Massachusetts Council's first program in the literacy field. Mrs. Helen Grush is to be commended for her later work supervising and developing "MCPS" teaching materials and procedures. Mrs. EstaRita Smith and Mr. Von Orton, with the able assistance of supervisors working in the field, have continued this development.

The dedicated service rendered by hundreds of volunteer tutors and teaching assistants deserves special recognition. So does the work of the regular members of the Project staff, some of whom--now volunteering--continue to serve. Whether they were involved in educational, administrative and operational, or research branches of the Project, all of these individuals contributed directly, in one way or another at one time or another, to this final report. Names of staff members who participated during the periods of the government grants are listed in Appendix L.

We wish finally to indicate our appreciation for the many and varied expressions of interest and inquiries which have been received through letters and visits from within this country and from abroad, as well as from local organizations serving adults' needs. The number and range of these requests dramatizes the work yet to be done on different fronts in providing adequate literacy training for the adults of many societies--both our own and those around the world.

A. B. K.

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CHAPTER I

INTRODUCTORY SUMMARY

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PART I - ORIENTATION FOR THE READER

The following information about the Project for Adult Literacy is provided for the rapid orientation of the reader without ready access to previous reports of the Project.

Type of Project: Research and Demonstration.

Grantee Organization: The Massachusetts Council for Public Schools, Inc. Boston, Massachusetts; a private non-profit corporation.

General Goals: The general goals of the Project were:

- To teach reading skills to adults who were functionally illiterate.
- To evaluate the effectiveness of each of two different reading methods for use with a volunteering adult illiterate population, studying in a community setting.
- To study the use of volunteers in the literacy training of adults.
- To gather and communicate basic knowledge regarding adult illiterates, illiteracy, and the organization and administration of community literacy programs.

Students: Adults 16 years or over whose literacy level was sixth grade or below in any one reading skill, and who volunteered for training.

Curriculum and Faculty: Two different systems were used to teach reading skills:

- *Reading in High Gear*, "RHG", a programmed method published by Science Research Associates, Inc., Chicago (1964).

  Teaching arrangements in RHG centers consisted essentially of one paid teacher in each center working with small groups of students. In larger centers, where it was necessary, a

Curriculum and Faculty (continued):

second paid teacher, or volunteer assistants, participated during the second grant period. Both teachers and volunteers were given special training in the method.

Originally, an RHG supervisor, with special training provided by the author of the materials in Washington, was responsible for overseeing the work of the RHG instructors. Later in the Project, this responsibility was assumed by the Projects' Associate for Operations.

- The Massachusetts Council for Public Schools' approach, "MCPS", employed a variety of published materials, as well as supplementary materials and techniques developed under the aegis of the Massachusetts Council.

In MCPS centers volunteer tutors worked in a one-to-one relationship with students. Two paid supervisors were responsible for overseeing the tutoring and for the immediate administration of each center. Both supervisors and tutors were given special training in the method by the Head Supervisor.

The latter's duties included: overseeing the progress in all MCPS centers, conducting reading consultations, reporting, and interpreting and refining MCPS reading materials.

At various periods other educational personnel included: 1) an educational research specialist who conducted special training seminars and consultations with participants of both methods as well as interviews and observational visits for evaluative purposes; 2) occasionally, educational consultants for special planning problems; 3) various temporary or part-time assistants.

Literacy Centers:

Centers were located in the Greater Boston area in churches, community and settlement houses, housing development apartments, an industrial cafeteria and one school building. Facilities were made available without charge through the courtesy of the host organizations.

The RHG method and MCPS system were both used in four locations, each in a separate room or on a different evening, comprising eight centers. In three centers, only the RHG method was used. In six other centers, established prior to the first government grant, only the MCPS system was used.

Scheduling:

Each center was open two nights per week for one and a half to two hours of reading training per night. An intensive, four-night-a-week center was made available in August 1968 to those students wishing to attend more frequently. Centers were open throughout the year except on legal holidays.

Students were accepted for enrollment whenever they applied. They began their training on the next meeting date of the center which had facilities for additional students and was most conveniently located for the applicant. In locations where both methods were used, random assignment of students to MCPS or RHG centers was the practice.

Goals for Students:

The Project's academic goals for each student were: 1) at least 150 hours of training or 2) completion of the materials or 3) attainment of sufficient literacy skill to permit students' matriculation to educational programs of broader scope or specific vocational training.

Research Activities and Staff:

Research was conducted originally from a base at Brandeis University in Waltham, Massachusetts, with Brandeis faculty overseeing the work of graduate students as testers and research assistants and of undergraduates in testing and preparation of data for computer processing. Later, research headquarters was moved to the Project's central Boston office; cooperation with Brandeis faculty and students continued but additional professional resources were used.

Research included assessment of student reading progress, evaluation of tests and other measures for assessing progress, evaluating the effectiveness of the teaching systems employed, demographic analyses of student and tutor populations, establishing the incidence of perceptual motor difficulty among students, analyses of the effect of attendance on achievement and project management, assessment of program impact on students and teaching personnel.

Participants:

Coordinated in this cooperative enterprise were the following participants.

- Roughly 1300 students or potential trainees (797 formally included in research data).
- Approximately 1500 volunteer tutors or tutor-candidates (786 formally included in research data) from 50 local communities in the Greater Boston area.
- 300 cooperating agencies and organizations volunteering resources engaged in the operations of 17 literacy training centers in 12 communities.
- 92 research and professional teaching staff, project management and supporting staff, full or part time.

Previous Reports:

Modifications to the Adult Literacy Project Proposal (CAP Grant 593-D), The Massachusetts Council for Public Schools, Inc., Boston, Massachusetts, September, 1965

An Interim Report - The Adult Literacy Project CAP Grant 593-D, The Massachusetts Council for Public Schools, Inc., Boston, Massachusetts, November, 1965

A Cooperative Enterprise - Adult Literacy Training at the Prudential Tower, The Massachusetts Council for Public Schools, Inc., Boston, Massachusetts, August, 1966

The Adult Literacy Project, Volume II (MASS-CAP-66-9610), The Massachusetts Council for Public Schools, Inc., Boston Massachusetts, November, 1966

Project for Adult Literacy - Progress Report, The Massachusetts Council for Public Schools, Inc., Boston, Massachusetts, March, 1968

PART II - SUMMARY DISCUSSION

The Project for Adult Literacy has been a dynamic evolving program of action research which has engaged the volunteered resources of hundreds of people and organizations in Greater Boston communities, in a common effort to help functionally illiterate adults to become readers.

Overall, the broad focus of research has been the identification and study of the complex problems involved in adult literacy and its mitigation in a major urban community "laboratory".

In this final report from the Project to the Office of Economic Opportunity statistical analyses of objective data predominate. In addition, however, attention has been given throughout the Project to the collection of less quantifiable but equally important observations about the adult students, their reactions to the training, their tutors' reactions and the impact of the program for both groups.

Of the chapters which follow, II through VII describe the adult students on a number of different parameters. In Chapter II the demographic characteristics of the adults who volunteered for training in these urban centers are explicated. Chapter III reports statistically on the attendance behavior of students and illustrates the influence of attendance as a controlling factor in students' progress and the conduct of the total Project.

Chapters IV, V and VI report on students' abilities at the time of enrollment and on their reading progress. Here also, and in Appendix E, are discussions of the shortcomings of the original test battery assigned for the Project's use, and of preliminary studies with newly available tests, deemed on the Project to be more appropriate for this student population. Studies designed to explore other factors presumed to be associated with students' reading disabilities are reported in Chapter VI and Appendix G.

Data about the group of students who persisted in the program for 150 hours or more are reviewed in Chapter VII to illustrate how these students differed from those who left the program with fewer hours of instruction. Within the 150-hour group, comparisons are made also between those students with higher measured reading improvement and those who improved less.

In Chapter VIII the demographic characteristics of volunteer tutors are contrasted with those of the students, illustrating some of the differences among people brought together in this cooperative enterprise. Studies designed to assess possible attitude changes on the part of tutors as a result of their participation in the Project are also reported. Information regarding the tutors' recruitment, training, attendance patterns, influence and importance to the Project appears in this chapter, in Chapter IX and in Appendix J.

In Chapter IX also, the teaching methods are presented for review as they were experienced in the Project--to a large extent through representative comments and criticisms of those most closely involved. Insights into the faculties' and students' personal preoccupation with the work are afforded through the quotations. Strengths and weaknesses of the methods for this population are highlighted, and factors of importance to the students' learning are identified.

Considerable detail is included in these chapters, primarily to make the information as useful as possible for a varied audience but also to illustrate the variety of analyses and the care with which they were carried out. The scope of these studies has been wide; and selected findings should be applicable to situations and problems faced by others engaged in or contemplating literacy programs for adults, and related educational programs or community projects.

A. Heterogeneity of the Student Population

An outstanding finding was the broad heterogeneity of the student population which responded when literacy training was made available free, for adults who volunteered to study in community based centers, without monetary reward from the Project. The demographic factors and test data revealing this heterogeneity indicated the complexity of the task of helping such a differing group to literacy. Knowledge of these factors also was important later in understanding the students' behavior and their progress in the Project.

Students' ages ranged from 16 to 86 years. Range of IQ's measured at entrance by one test was from "zero" to 116, and by the other from 46 to 112. (See discussion page VI-II ff. regarding these tests.) Reading skills of individuals varied from complete illiteracy to relatively high single skills in combination with skills which were poorly developed.

Categories of students' previous education ranged from no schooling to tenth grade or more. The largest proportion of the adults had had some previous opportunity to learn to read, and yet were eligible for training under the prescribed definition of functional illiteracy. Only about three percent reported no schooling at all; and only thirteen percent had attained third grade or less. Thirty-four percent of the students supplying data for the general sample had already had a part of their schooling in special classes. In a sample study the largest proportion of students recalled having had reading difficulties from childhood on, while others had become aware of them only during high school years or in adulthood.

Other factors important to individuals' responses to training, testing, or the program in general were: the range of years since last educational study; differences in geographical origin and resulting dialects and colloquial expression; differences in individual life experiences, in contemporaneous responsibilities as adults, and in reasons for having enrolled in the Project.

Analyses of interviews and expert observation suggested one respect in which differences were not so widespread. With the possible exception of the youngest age group, the adult students appeared to have firmed already, in their patterns of living, their accommodation to their handicapping lack of reading skills. These accommodations usually involved some forms of concealment. For many students their first visit to a center represented a first voluntary acknowledgment of the handicap as well as the attempt to begin its correction.

B. Attendance: A Major Factor

Attendance records demonstrated further the ambivalence of students about correcting their reading handicap, and illustrated the significance of the attendance factor in a project of this kind. Fourteen percent dropped out after only one session of less than two hours of instruction. Approximately twenty-five percent of the general student sample remained for less than six hours or two weeks of regular attendance.

Examples from analyses of particular groups revealed that a higher proportion of the youngest students (sixteen to twenty-one years) were among those leaving early, although nineteen percent of them did stay long enough to reach the highest attendance quartile. Of the older students, and of the former special class students, higher proportions also reached the top attendance quartile. Not surprisingly, of those who had already attained tenth grade or more, thirty-three percent, departed in six hours or less; however, seventeen percent with this same previous attainment did reach the highest quartile. A lower proportion of the Negro students were in this quartile; while the highest proportion of the white students reached it. Of the students who learned about the program through organizations, including social welfare agencies, thirty percent left the program in less than six hours, but twenty-three percent attended long enough to reach the top quartile.

A more disrupting attendance factor than the prevalence of early drop out was irregularity. This was characterized by absences which varied from a single session at a time, often without notice, up to absences of over a year following which students returned seeking further training. In many instances investigation disclosed that these irregularities were beyond the students' control.

These attendance patterns constituted a serious drawback since the recruitment and regular attendance of the volunteering students were crucial to their reading progress, to the collection of research data, and to the administration of the total project.

A pattern, similar to that among the volunteering students, of attendance and drop out was found among volunteers who worked with the students. The combined effect was the creation of major pedagogical and operational problems which taxed Project resources in varied ways.

Thirty-four percent of the volunteer tutor-candidates who registered and attended training courses never actually tutored. A little more than one-third tutored for five months or less. Noteworthy, however, is the fact that almost one-third of the volunteers who were trained did tutor for six to thirty-six months or more.

C. Necessity for Individualized Instruction

The need for individualized instruction for most students was overwhelmingly demonstrated in both methods used in the Project. Individual tutoring was planned for under the MCPS system, although absences and turnover made it difficult to maintain continued attention for students from the same tutors. However, even in the RHG programmed method, which was designed to be taught to groups where students could progress at their own pace, faculty reported that considerable individual attention was imperative. After prolonged efforts most RHG instructors concluded that, with the Project's students, group instruction was not feasible; and for the most part they resorted to helping students individually in rotation.

The heterogeneity of the student body and the irregularity of attendance undoubtedly contributed to this problem. In addition, possible roots of the need for individualized instruction became apparent in research investigations into the ways in which adult illiterates differed from literate adults on dimensions other than reading. Tests were administered for analyzing the relationship of students' intelligence, psychological functioning and perceptual motor coordination to their ability to learn to read.

Because of the special conditions of these studies, such as varied sizes of the sampling groups, findings must be viewed as tentative and should be considered in the context of the more extensive discussions and qualifying statements provided in Chapter VI. However, the following findings have some pertinence to the students' need for individual training:

- Median IQ's of groups tested on two different tests used as intelligence measures were 63 and 76, scores described in the literature as "mental defective" and "borderline defective".

- An unusually high proportion of long attending students had IQ's below these medians.

- Former special class students were almost equally divided above and below the median IQ rather than being restricted to the lower IQ group.

- In a study characterizing a sample of students on a developmental dimension of psychological maturity, over fifty percent produced results which suggested significant impairment in their psychological functioning. Results from nineteen percent suggested psychological immaturity. Thus, seventy-three percent of this particular sample produced results rated as being different from those which clinicians ordinarily expect from an average adult.

- A significant degree of psychomotor impair- was indicated by the sample of students in the Project tested for perceptual motor functioning, as compared to the normal sample with which the test was originally standardized.

- On the average, adults contributing to these particular studies were handicapped by--in addition to their reading disabilities--relatively low intelligence, immature or impaired psychological development and perceptual motor dysfunctioning, as measured by the "associated" or "non-reading" tests in use in the Project.

- Analyses of these and other findings suggest that the degree of functional illiteracy was related to the degree of general competence, and to the level of prior education. Though this conclusion was not confirmed at a statistically significant level of confidence by every pair of test comparisons made, no such relationship was in the opposite direction to the generalization.

The generalizations above refer to the average or median student in these particular studies. To comprehend the task undertaken by the Project in attempting to teach these adult students, it must be recalled that there were others who were much much more competent on all these dimensions, and still others who were much less so--all to be taught with one of two methods in the same program.

D. Measurement of Adult Achievement

Almost all students showed evidence of reading improvement, some of which was observed but not measurable with the prescribed tests. Findings regarding students' reading ability, measured progress and the tests employed are summarized below:

- Retest results after 50 hours of instruction showed measured improvement in certain skills for individual students, but slight if any improvement for the student group as a whole.

- Retest results after 100 hours of instruction showed slight improvement.

- Consistent improvement over all three entrance reading tests was evident after 150 hours of instruction.

- Overall, the retesting after 150 hours of instruction did not point to any consistent or statistically significant advantage of one instructional method over the other.

- Systematically, retest groups of students remaining longer in the program were found to have had lower initial reading test medians than those of the general student sample.

- In a study of a limited number the most dutiful attenders among the student sample were found to have been the most illiterate on initial reading tests and the least intelligent as defined in the original testing battery.

- Tests originally assigned to the Project for research were found to be inappropriate for the adult student population. Among features criticized about the various tests were: the complex procedures for recording answers, the tests' construction and standardization for children, their insensitivity to the material being taught and to the lower levels of learning.

- The Project's research into more suitable ways of assessing adult illiterates' reading progress culminated in studies employing--in a revised battery--tests newly available which were designed especially for adults. This battery was introduced with care, to minimize loss of test data from the original battery and to provide comparative data with which to evaluate those findings as well. Detailed reporting of this research appears in Chapter V and Appendix E.

- All reading tests were found to be significantly intercorrelated, indicating that similar processes were involved in performance on all of the tests.

- Considerable variability among the reading skills was shown in that median grade levels associated with "word knowledge" were systematically higher than those associated with "reading comprehension".

- The adults' performance on the reading tests designed for adults, produced generally higher grade level estimates than had the similar instruments in the original battery which were normed on children.

- In contrast to the anxiety exhibited with use of the first testing battery, many students found taking the revised battery to be a pleasant experience and asked to be tested again.

- A limitation on evaluation of the new tests for reading was the brevity of additional instructional time with the same students after their first testing period and before the closing date for data collection.

- Throughout these testing studies subtle differences in test construction or administration were seen as possibly yielding important differences in performance level.

- Although the revised testing battery seemed more appropriate for the Project's students--relative to the original battery--the use of any tests employing grade level estimates with such a population was questioned. The sizeable variations in measured grade level from skill to skill among the adult students contrasted strongly with what is expected of the grade level concept as employed with children: measured abilities clustering closely around the given grade level.

- For the student "achievement" usually meant the accomplishment of a specific reading goal with which he came to the program, rather than the attainment of a particular level of reading facility measured by a formal test. Being able to sign a check with one's own name, qualifying for a driver's license, reading a newspaper, obtaining or holding a job where

- reading was required, being accepted in the armed services, being able to read to children in the home or help them with homework, were cited as such goals. Among goals adopted by students during instruction were: obtaining and using a library card, registering to vote, achieving U. S. citizenship. Attainment of cherished goals of these kinds sometimes was sufficient accomplishment to lead a student to drop out of the program, or to qualify for a more comprehensive program offered elsewhere, before formal testing was able to record measurable change.

E. Patterns of Learning and Behavior

Essentially unmeasurable by formal testing but clearly evident to the trained observer were patterns of learning and behavior related to the training experience, which are sufficiently widespread and typical as to merit comment. Chapter IX develops this theme more fully, but highlights are presented below.

- For the average student of all age groups, and with either method, learning to read was a slow, difficult and tedious process.

- For most students progress was erratic, characterized by extended plateaus during which little tangible gain was discernible. Dramatic breakthroughs did occur, but they were usually minor achievements relative to the total task of becoming literate.

- Students with higher initial reading levels were often found to read less well for a time as they developed new habits in different reading skills.

- Extreme fatigue was a commonly reported reaction of students to their difficult task, as were periods of extreme frustration.

- A common problem among students was their inability to comprehend the abstract. Concepts or rules introduced in the training were difficult for them to understand, retain, and apply.

- More than usual difficulty with discrimination of letter shapes and sounds was also common among the students, persisting for some adults for as long as fourteen to sixteen months of training.

- Particularly with beginning students and slower learners lack of confidence and fear of failure were evidenced in their need for frequent reassurance and concrete exhibits of progress no matter how small.

- Students' lack of confidence was reported to affect their performance and be more apparent during observers' visits, necessary group tutoring, testing sessions, or working sessions with unfamiliar teaching personnel.

- Among the more advanced students and a large proportion of the younger there was observable demand for rapid progress, variety in the training and in the reading content.

- Problems which were known to interfere with students' learning for single sessions, or to interrupt training for longer periods, included physical, economic, emotional or psychological difficulties of either the students or their families.

- With most students, difficulties with skills of communication were not confined to reading and writing, but were observed to extend into listening, oral communication and self expression as well.

- Frequently students spontaneously reported increased self-confidence along with increasing freedom in speaking to others and in being able to express their own thoughts, which for the first time seemed worthy of being shared.

F. The Teaching Methods: Analysis and Critique

There were advantages for certain students in the teaching strategies and content of each of the methods. These are discussed in Chapter IX. Analyses of the methods in detail, previous to the final months of the grant, had concluded that:

- Both methods needed considerable improvement, with major revisions in teaching strategies and materials.
- The continued use of RHG for this student population was not justified unless outside materials and enrichment activities were incorporated into each session and more flexibility in the method itself could be arranged.
- Modifications were required in the MCPS system in two directions--in systematizing the use of outside materials and in overcoming the boredom for adults of the earlier parts of the basic beginning texts.
- Both methods needed more emphasis on the transfer of reading skills to everyday life situations for the achievement of genuinely functional literacy.

While the two teaching methods used in the Project differed in many respects, the detailed analyses revealed that there were somewhat similar instructional problems in both methods for meeting the pedagogical needs of the adult students. A concurrent survey by the Project, of other methods being developed for adults, found some of these same criticisms to be applicable to others also.

Both methods used in the Project were criticized in varying degrees for the following aspects, among others:

- The common starting point for all students regardless of previous level of reading attainment; and the inadequacy of the acceleration procedures for more advanced students.
- The extended and relatively unrelieved emphasis on drill.
- The stress on perfecting "pure" letter sounds unfamiliar to the students' environment.
- The use of nonsense syllables with mature adults.
- The postponement of reading for meaning until basic skills were developed.

- The failure to provide systematic training for early transfer of the students' growing skills in practical application.

- The scarcity of reading content within the students' capabilities which was suitably mature and interesting.

In both methods some of these conditions had been in the process of improvement. The eclectic nature of the MCPS system--compared to RHG's tight programming--permitted greater flexibility for integrating supplementary materials and new procedures into the basic structure and for effecting experimentation toward meaningful change. With regard to READING IN HIGH GEAR a new and revised edition, not yet available for use in the Project, was said by the publisher to have corrected some of these faults.

G. The Role and Performance of the Volunteer Tutors

The participation of the volunteer was crucial in the MCPS program with its one-to-one tutor and student working relationship. Later, as the need for more individualized instruction became apparent, the volunteer was also important in the RHG centers. Hundreds of volunteers rendered exceptional service in the Project, some over long periods of time. The irregular attendance of others, or their departures, constituted considerable drain of Project resources and ranked high in causing setbacks in students' progress, interruptions in their training, or acceleration of their departures.

Tutors' attitudes, personalities, behavior and teaching capabilities were strongly influencing factors, affecting students' reactions to the program, their behavior and the quality and extent of their learning.

Required activities in the tutor program included almost constant replenishment of the volunteer tutor ranks, continued training of new tutor candidates, satisfactory assignment of tutor-student teams and to some extent nightly reassignment. Discussion of problems associated with these activities--which may be prevalent in similar undertakings--and efforts to resolve them, is found in Chapter IX page 39 ff.

The following statements about the volunteers and their participation are representative of the findings from varied studies reported in Chapters VIII, IX and Appendix J.

- In all, almost 1500 tutors or tutor-candidates were attracted to the Project over a three and one-half year span. Of these, 786 from 50

- different local communities in the Greater Boston area were registered, trained and assigned for duty in a center.

- Women tutors predominated in a ratio of four to one, compared to the student group, where men were predominate in a ratio of almost three to one.

- The median age of the tutor group was 30 years, whereas the median age for students was 27.

- Forty-three of the volunteer tutors were Negroes, of whom five became supervisors as a result of their tutoring experience.

- Only one percent of the tutors had had less than a twelfth grade education whereas seventy-five percent had had some college study, a college or advanced degree.

- A majority of the tutors were employed. Occupations which ranked highest among tutors were categorized as "professional", "white collar", and "homemaker" in that order.

- Fewer than one of every five tutors had teaching certificates. Of those certified, few had had extensive teaching experience, and almost all had been elementary school teachers, with no experience in teaching adults.

- Little difficulty was experienced in attracting tutor-candidates to the program. The problem lay in holding the majority in regular attendance for at least one year.

- Various attempts to arrive at predictive criteria for general screening of tutors were not conclusively fruitful, although some groups were identified for specific kinds of programs. Participation of the young tutors on the whole was for relatively short periods; but they learned quickly, were enthusiastic and capable. For short term programs the commitment of such groups as college students for tutoring would have been more useful and their leave-taking less problematic than was the case in this project.

- Though proportionately more of the men tutors dropped out early, those who did stay continued to tutor into the group of longest attenders with records of two to three years of tutoring without interruption. In a project where the larger proportion of students were men these tutors were highly valued.

- On the basis of the demographic studies, in general the most likely long attending tutors for this type of program were: married, with children, occupied in professional, white-collar, homemaking or skilled positions and were over thirty years of age.

- The Project's experience was such, however, that to have restricted tutors to these demographic groups would have been to miss many with different demographic characteristics who contributed, collectively, thousands of hours of valuable service.

- Just as it was with students, fear and a feeling of inadequacy were to some extent prevalent among new tutors, although not in so marked a degree or for such prolonged periods.

- Some tutors with previous experience in teaching reading or English, took issue with the systems in use and dropped out when their own preferred systems, which varied greatly, could not be employed to change the program radically.

- Among the tutors and teaching assistants were some who had needs which were almost as pressing as those of the students and which detracted in various ways from the Project's efforts to help the students.

- When interviewed on the subject, supervisors described their best tutors in generalizations which emphasized tutors' personal characteristics rather than educational experience or expertise. Considered important were tutors' tact, patience, enthusiasm, understanding, sensitivity, adaptability, self-confidence, maturity, openness to criticism anddirection, dependability.

- Students cited tutors' promptness and regular attendance as being important to them, and only a few made any unfavorable comments regarding other aspects of their work with tutors.

- About one-fifth of the tutors responding in one study of slightly under 200, reported that their participation in the Project was a first experience in civic or community activities.

- After participation in the program some tutors showed attitude changes in the direction of increased sensitivity to students and their needs, more positive views of the adult illiterate, and more concrete and practical observations about them.

- Changes tutors noted in themselves were presented in terms of interpersonal contacts and insights, and new skills gained as tutors or teachers, along with personal satisfaction over this kind of achievement.

- Changes in tutors' careers occurred as some tutors, finding their part time tutoring more satisfying than their daily work, undertook educational programs leading to professional teaching degrees or social service work.

H. Selected Findings and Conclusions

1. It is feasible to coordinate effectively a wide variety of community resources in the provision of literacy instruction for adults.

2. The problem of adult illiteracy is much more prevalent than is widely recognized, and training facilities are inadequate in relation to the need.

3. Unskilled volunteer tutors can be engaged effectively in the literacy instruction of adults, with ten hours of pre-training, and supervision as they work with an adult student.

4. A widely heterogeneous group of adults needed basic literacy training, without which they could not make use of other educational programs or work opportunities which were available.

5. Almost all students, regardless of their entering level of reading skills, required individualized instruction at some points and many required it throughout their training.

6. Though there were many exceptions, irregular attendance and early drop out of students was a major problem, hampering both learning and the conduct of the Project's work. The pace of research data collection and analyses was set in large part by students' highly unpredictable attendance behavior.

7. Systematic gains in measured reading skills were only evident for the student group as a whole after 100 to 150 hours of instruction.

8. Almost all students were observed to make some progress in certain reading skills, although at beginning levels such progress often was not measurable with prescribed tests.

9. Preliminary experimentation with new tests designed for adults seemed promising and yielded results at a higher level than the original battery, though relatively comparable.

10. Becoming literate constituted a major, and pervasive change in students' accommodation to living.

11. Critical points for drop out of students were identified as being: after the first session in a center; after between six to ten hours of instruction; after extended plateaux with little tangible evidence of progress; following a change of tutors or loss of a favorite; and the point at which students were faced with giving up their illiterate state and coping with the demands entailed in being literate.

12. For most students learning to read was a slow, tedious and difficult process which was extremely fatiguing.

13. Major pedagogical problems were: providing sufficient continuity of individualized instruction for students, and keeping students in regular attendance long enough to master, through basic drill, the main principles of either method.

14. The median number of months required by students to accumulate 150 hours of instruction was 17.5, with a range from almost one year to two and one-half years.

15. Volunteer tutors and teaching assistants were essential in the Project and contributed thousands of hours of valuable service. Their recruitment in sufficient numbers was not a problem, but the pattern of attendance and drop out of many created difficulties in tutor-student assignments and extensive use of Project resources.

16. Tentative and carefully qualified analyses indicated that, on the average, students in sample studies, in addition to their reading disabilities, were handicapped to some extent by relatively low intelligence, immature or impaired psychological development and perceptual motor dysfunctioning.

17. Adult illiteracy is not limited to the poor, and there are advantages for the underprivileged in being aware that others are similarly handicapped, and in the social exchange of studying together.

18. Scheduling instruction in evening sessions was important, since most of the students, when they entered, could not have attended at any other time.

19. The MCPS program is especially suitable for instructing adults who are relatively self-motivated, who need to learn with the least possible disruption of their living accommodation, and who respond well to interest and instruction sustained over a lengthy period of time.

20. Procedures of special value to adults in the RHG program were those which permitted students an early sense of progress, early familiarity with longer words, experience of leading and assisting others.

21. Neither method of instruction, engaged as in this project, would be effective for a program primarily concerned with obtaining rapid learning gains for all students, or with achieving rapid and dramatic change in students' habits and ways of life. In this regard the principal drawbacks have been the limited number of sessions per week and the limited length of sessions, both dictated by the free time and energy of the majority of the students and the operating circumstances of the program.

I. Lessons from Experience

In the paragraphs which follow are presented, in highly condensed and simplified form, a series of recommendations for action, together with guidelines for enhancing the effectiveness of action, in future programs directed toward ameliorating adult illiteracy in urban American society. These recommendations and guidelines, distilled from both technical research and operational analyses, when read in the context of the full report, summarize and synthesize the principal lessons learned in the conduct of this Project.

- Build and maintain broad awareness within the community about the prevalence of illiteracy among adult citizens, of its limiting effects for both individuals and the community, and of the necessity for long-term, continuing education for adults thus handicapped.

- Make facilities available to permit attendance year 'round, and as often during a week as possible, in a comprehensive, long range, stable program of education which begins with basic literacy instruction in combination with other curricula suitable for adults as they progress.

- Make provision for both individual and group instruction, to be employed in sequence or in combination, thus meeting individual needs while incorporating the social advantages of group work.

- Maintain instructional centers which are open to others than the poor, in order to provide the peripheral learning and encouragement which occurs when mixed socio-economic groups with common handicaps work together.

- Schedule instruction with flexibility to facilitate accommodation to the outside responsibilities and energies of adult students. If circumstances force extended absence or drop out, encourage reentry for further training with minimum formalities.

- Encourage students' "active" participation in the learning/teaching situation by: stimulating unstructured discussion and student contributions of reading material; reducing the monotony of extended routine drill; making early and orderly provision for transfer of developing reading skills to concurrent, everyday life situations. (See also this chapter, page I-15 ff. and Chapter IX.)

- Minimize test-measurement standardizing achievement by grade level estimates, at least until 100 to 150 hours of instruction have been experienced. Employ more frequent, short, informal tests, built on material currently being taught and designed to provide evidence to the student of his progress--not only to inform his teacher.

- Keep careful records which, at a minimum, should consist of journals, written work and tape recordings by the students, thus permitting them to see, hear, review and appreciate even minute progress. (Individual attendance graphs also help them understand reasons for lack of progress.)

- Maintain enough flexibility to take advantage of any specific immediate goals which have motivated a student to seek literacy training.

- In utilizing the services of volunteer tutors (an economic necessity in programs like that of this project) pay particular attention to:

    a) obtaining a firm commitment for some specific length of service;
    b) providing rigorous training of as long a duration as feasible;
    c) providing close professional supervision and systematic in-service training;
    d) introducing appropriate techniques of special education as well as general adult education;

    e) developing sensitivity to adult needs and techniques for responding to them.
    f) promoting constructive channelling of tutors' influence and potentially affective involvement in the one-to-one working relationship.
    g) rigorous adherence to attendance policies and schedules.

- Enlist the support of community libraries in participating in adult literacy enhancement programs and build explicit exposure to library resources into the literacy training syllabus.

- Support further research in key areas where present knowledge, experience or procedures are deficient:

    a) on relationships between IQ, perceptual motor functioning, psychomotor functioning and reading disabilities in adults.
    b) on development of better diagnostic tools, both for placement and for program planning.
    c) on development of a more suitable concept than grade-level measurement for establishing the literacy capability of adults.
    d) on evaluating and adapting for application with adults suitable techniques now used in experimental teaching with children.
    e) on a definition of functional literacy oriented toward functional application of reading skills by adults rather than toward grade-level achievement of children.
    f) on development of tests related to such a definition.

- Avoid wherever possible discontinuous or irregular funding with its disruptive and costly effects on program planning, management, personnel retention and project morale.

4. Summary of 150-hour Retest Findings

- The trend for students to stay in the program the longest, who read most poorly initially, was supported by the data from the 150-hour retest sample.
- Consistent improvement over all three reading tests in the relevant battery was evident after 150 hours of instruction.
- No significantly consistent advantage of one instructional method over the other was apparent from the 150-hour data.
- The tendency for RHG students to have had higher initial reading scores than MCPS students, continued to be apparent in the group who had attained 150 hours of instruction.

III. SUMMARY

The assessment of the reading progress of students in the Project has been a major focus of research activity. The length of the original testing battery, the stringent criteria in sampling procedures and the irregularity of students' attendance have combined to limit the numbers of students included in some of the testing samples. However, the findings presented here, when analyzed in combination with those in the succeeding two chapters on test results provide a clearer understanding of the adult illiterates in this program and the multiple problems yet to be faced in successful training for them and others like them.

A. Test Results

In this chapter, reading improvement was been reported as summarized below:

- Initial reading level of the Project's student group, as indicated by median scores on three entrance reading tests, was 3.2 grade level, 2.8 grade level and 2.2 grade level -- all well below the Project's entrance criterion of sixth grade level or less in any one reading skill.

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- Retesting after 50 hours of instruction on alternate forms of the same three reading tests measured only slight, if any, improvement in reading for the student group as a whole although individual students did show measured improvement in certain skills.

- Retesting after 100 hours of instruction showed some improvement, with median change on the three reading tests being at 0.3, 0.2, and 0.0 grade levels.

- Consistent improvement on all three entrance reading tests was evident after 150 hours of instruction. The median changes on the three tests, computed with the most stringent sampling criteria, were: 0.6, 0.3, and 0.7 grade levels. Median improvement changes for other 150-hour sample groups varied up to 0.7, 0.7, and 1.1 grade levels on the various tests.

- At the 100-hour retest period, median improvement for the MCPS student group was slightly, but not significantly higher than for the RHG student group.

- Overall, the retesting after 150 hours of instruction did not point to any consistent advantage of one instructional method over the other.

- In addition to the above group medians of improvement, the range of improvement by individuals was shown, with highest individual gains at 50 hours being 2.9 grade levels; at 100 hours being 2.7; and at 150 hours being 3.9 grade levels.

- Students in the retest groups who remained the longest proved to have had systematically lower initial reading test medians than those of the larger student group. In short, there have been proportionately more seriously illiterate students among the longer attending groups. Other findings which correlate with this observation are described in Chapter III and Chapter VII.

Some further comment on the findings in three areas is warranted.

B. Comparison of the Two Methods

1. Differences in Initial Median Reading Levels

The initial median reading levels of the 50-hour retest sample as a whole were comparable to those of the larger sample of students from which the 50-hour sample had emerged.

However, of the students tested at the 50-hour retest point and at the 150-hour point, the RHG students as a group proved to have had higher initial medians on the reading tests than had the comparable MCPS groups.

Several procedures were used to insure the random assignment of students to the two methods. However, it is possible that some biasing assignments of students to centers using the different methods may have taken place. A complex interaction between such factors as: 1) original location of reading centers, 2) time of initiation of new centers, and 3) currently available space and teaching facilities in certain geographical locations, may have been responsible. If so, resulting biases might have contributed toward the observed differences in reading levels of MCPS and RHG students, as well as to some of the significant differences in the demographic characteristics of the total Project samples reported in Chapter II.

2. Differences in Reading Improvement Medians

While slight differences were noted in the median gains by groups in the two instructional methods at the 100-hour and 150-hour testing periods, no consistent or statistically significant advantage of one instructional method over the other was manifested. The differences may be attributable to varied factors such as: 1) the small size of the samples for stability of the median change measure; 2) effects of the order in which different reading skills were introduced and emphasized to the students in the two methods; and 3) the insensitivity of the original tests to change at the lower levels of reading attainment.*

C. Relationship Between Initial Reading Level and Reading Improvement

One study which may be pertinent in explaining the above differences was conducted, using three reading tests, to determine whether there was a relationship between: 1) the initial level of performance on reading tests; and 2) the amount of change at 50- and 100-hour retests. Results indicated that those students with the highest grades on the initial tests tended to be disproportionately represented among those whose scores had decreased at retest; and those students with the lowest initial scores tended to be the ones who had improved the most.

Observations by teaching personnel corroborated these findings. Teachers explained that those students with some reading skills usually read less "well", temporarily, as they developed new and better reading habits. They "slowed down" (on timed tests) and made less use of contextual clues in their reading.

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*The Intermediate Level SAT tests used, do not differentiate differences in level within the first grade. Thus, the lowest grade level which can be attained is about second grade. Accordingly, a change from zero correct answers to one correct answer may be reflected in an inordinately large grade level increase. The MCPS student sample is likely to have had more of such broad gains, having begun at a lower initial level than the RHG student sample. Such differences tended to disappear by the 150-hour period and results then reflected steady reading improvement by the student, rather than such factors as test reliability and test level. (See also Chapter VII for additional data on 150-hour retest results.)

D. Reading Progress Evaluation Measures

The problem of evaluating a student's reading level and reading progress through objective and reliable tests has occupied the attention of the Project for Adult Literacy staff since the Project's inception. The problem has been discussed at length in various sections of two previous reports and has become widely recognized in the field of adult education and testing. In Appendix E of this report, a summary of the background of the original test battery, and a brief test-by-test critique are provided. Salient points of this discussion are summarized below.

Tests in the original reading test battery were designed for use with children, consequently:

- The vocabulary is more appropriate for children than adults.
- The administration procedures pre-suppose the "test-wisdom" of school children which is generally absent among adult illiterates, especially those in the upper age brackets or whose educational experience was distant.
- The norms are based on the performance of a population of children and are not appropriate norms for comparison with adult performance.
- The concept of grade level which they employ is not altogether appropriate for the evaluation of adult performance.
- The norms are based on a predominantly middle class sample, and some cultural bias is inadvertently involved.

In addition, the original test battery was insensitive to development at the lower levels of literacy.

Test data presented in the present report reaffirm the above statements. The consistent observation of virtually no measurable change after 50 hours of instruction was illustrative of the tests' insensitivity to gains at the low literate level.

Previous progress reports of the Project have been based primarily on results of 50-hour testing. It was anticipated that, as more instruction took place, test results would begin to reflect the reading progress attained. This expectation has been confirmed as consistent improvement has been measured after 100 and 150 hours of instruction. The amount of progress has varied with the tests, since the different tests place different demands upon the student. The most striking evidence of overall improvement in reading has been apparent in median scores, only between 100 and 150 hours of instruction, although improvement by most students has been apparent, much earlier, to those working with them.*

It was noted in Interim Report, Volume II, that the initial emphasis in both methods of instruction is on sounds, letters, and individual words, and not on contextual reading. Thus, the SAT Paragraph Meaning test shows least improvement after 50 hours, while the Gates and SAT Word Meaning tests show most improvement. Present results indicate that only after 150 hours do students show any meaningful improvement on the Paragraph Meaning test.

It is encouraging to be able to report progress measured by the battery of tests which have been criticized previously. However, important questions concerning the meaning of these results still remain unanswered. First, though consistent improvement is measured by the tests after 100 to 150 hours, the question remains as to whether or not the measure is sufficiently sensitive to the material which is being taught. There is also the question as to how much important transfer of literacy skills to areas of students' daily activity does take place, unmeasured, while there is still relatively little transfer made to the kind of skills demanded by the standard "literary" reading tests.

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*These generalizations pertain to the overall sample of students and do not reflect the full complexity of the data. Some students do appear to make considerable progress, as measured by the tests, after 50 hours of instruction; whereas some students, after as many as 150 or more hours of instruction make little or no measurable progress. Some of these differences appear to be related to demographic differences and/or differences in initial reading level. In Appendix A, a summary is presented of trends observed for different demographic groupings.

Further, it is still unclear as to whether the grade level changes reported should be viewed in the same way as such information is viewed for a population of children. Specifically, for the child, an increase of one grade level is expected after approximately nine months of schooling, five days per week. Is one grade level nine month's worth of learning for an adult, especially when weekly instruction totals four hours maximum? Many factors would have to be considered in answering this question in regard to reading skills improvement for adult illiterates.

In the light of the insensitivity of the tests to changes in reading ability at the lower literacy levels, and the relatively small number of students who stayed in the program through 150 hours, little can be said of the effectiveness of one reading method over the other. The differences in median reading improvement scores shown by the MCPS students relative to the RHG students are slight and not statistically significant.

CHAPTER V

NEW TESTS FOR ASSESSING READING
A PRELIMINARY STUDY

CHAPTER V

NEW TESTS FOR ASSESSING READING: A PRELIMINARY STUDY

Each major report submitted by the Project to date has indicated concern over the tests used for assessing reading ability and evaluating reading progress. Several small preliminary studies have been carried out pinpointing various problems with them, and searches for more adequate substitutes have been made. Criticism of the test battery has centered on the fact that the available tests were designed for and standardized with children and were especially inappropriate for the population of adults served by this Project.*

As new testing instruments, designed for use with adults, became available, the testing program was revised in order to further the following objectives:

- the investigation of new and potentially more appropriate testing measures,
- the collection, at the same time, of comparative data with which to evaluate previous findings on the Project,
- the documentation, for planning by others serving similar populations, of the use of these tests under controlled conditions in an action-research setting for adults.

This chapter describes the second or "new" test battery, introduced in the Project on a trial basis, beginning July 1967. It also presents results of the reading tests administered from that battery. Results of associated or "non-reading" tests are reported in Chapter VI.

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*See Chapter IV and Appendix E.

I. TESTING AND SAMPLING PROCEDURES

A. New Test Battery: Rationale and Descriptions

The revised test battery was introduced on an experimental basis in eight of the Project's centers to permit the most accurate analysis possible in the following areas of concern:

- Students' eligibility for the program by virtue of their inability to read at the sixth grade level.
- Students' reading level upon entering the Project.
- Students' measurable reading progress.
- The distribution of measured IQ's of the student population.
- The relationship of the IQ distribution to reading.
- The incidence of visual-motor disability in the student population and its relationship to the mastery of reading skills.

Changes introduced in the new testing program involved: substitutions in the original testing battery, new procedures in test administration, and a reorganization of testing schedules. The revised exploratory battery included the following tests:

Gates-McKillop Reading Diagnostic Tests, "I. Oral Reading," Forms I and II.

Adult Basic Education Student Survey (ABE), Form A, "Part I: Reading Comprehension" and "Part 2: Word Recognition."

Adult Basic Learning Examination (ABLE), Levels I and II, Forms A and B.

Wechsler Adult Intelligence Scale, "Vocabulary Subtest," (WAIS-Vocabulary).

Bender Visual-Motor Gestalt Test.

Reasons for the selection of the individual tests are included in the following descriptions.

The Gates Oral Reading test was retained as an initial screening device for evaluating eligibility for the program. While some of its shortcomings hampered its effectiveness as a research instrument, the gross estimate of reading level, which it quickly and efficiently yields, was useful. The test also served as a bridge between the original and revised test batteries and provided an estimate of the comparability of student samples taking the different tests.

The ABE and ABLE tests, both new instruments published in 1967, were specifically designed for use with adult populations. Advantages of these tests are: 1) that they have been standardized with adult samples, and 2) that they purportedly have item content and administrative and answering procedures which are suitable for adults who have had little recent experience in taking tests. Only those portions of the tests dealing directly with literacy skills were administered; subtests on such subjects as arithmetic were omitted.

The WAIS-Vocabulary subtest is part of the well known and widely used Wechsler Adult Intelligence Scale. Advantages of the vocabulary test are that it is quick and easy to administer, is highly correlated with overall intelligence as measured by the total test, and is well accepted as to reliability and validity. The test procedure requires that the student make a verbal response which is recorded by the examiner, and which requires no decoding of written symbols by the student. As used in the Project, verbal IQ's were derived by prorating, as though the scaled scored obtained by the student on the vocabulary subtest had been obtained on each of the verbal subtests of the WAIS.

The Bender Gestalt test is a widely used clinical instrument, designed to evaluate visual-motor processes. There is a large literature reflecting its use, including standardization studies with objective scoring procedures and normative data.

B. Transitional Procedures: Old to New Batteries

The introduction of the revised test battery in the centers was designed so as to minimize loss of test data already accumulated. Newly registered students took the revised test battery. Previously registered students who had taken the old test battery were retested after 100 hours and at each 50-hour interval thereafter.* Where time and circumstances permitted, students who had taken the old battery also were given the new tests. Thus, test data for the same individuals was provided for comparative analyses of the two batteries, and at the same time the old battery with its shortcomings was phased out most efficiently.

C. New Battery: Size of Samples

The numbers of students who were tested with the various parts of the new battery are presented in Table 80.

As the table indicates, the size of the ABE test sample is small compared to that of the ABLE sample; and thus generalizations concerning the ABE must be viewed as tentative.

TABLE 80

NEW BATTERY: DISTRIBUTION OF STUDENTS TESTED

Test	Number of Students
ABE	30
ABLE	92
Bender-Gestalt	98
WAIS-Vocabulary	99

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*Time intervals for retesting were revised along with the test battery. Originally students were retested after 50 hours of training. Project experience, and the experience of others in the field, have indicated that little if any measurable change can be observed during the early phases of instruction, although teaching personnel often reported marked session-to-session progress. It was therefore decided that the first 50-hour retest should be discontinued, leaving the testing intervals at entry, 100 hours and each 50-hour interval thereafter.

II. COMPARATIVE ANALYSES OF TESTING RESULTS OBTAINED

This chapter is limited to the reading tests of the new battery except where reading tests of the old battery are relevant for purposes of comparison. Non-reading tests of old and new batteries (Lorge-Thorndike, WAIS-Vocabulary, Berea Gestalt, Bender Gestalt, DAP) are discussed in Chapter VI.

The section below reports on results obtained with the new battery of tests when employed with a volunteer adult illiterate student population.

A. Correlations Among Reading Subtests

Correlations among the various reading subtests were examined to determine the extent to which they measured the same, or related, processes. The procedure involved ranking students from high to low ability, as recorded on each test. The comparison of relative standings of the students was then determined by computing rank order correlation coefficients.

A list of the intercorrelated tests follows. Some students were represented in more than one comparison.

1. ABE subtests and Gates
2. ABLE subtests and Gates
3. ABE subtests and ABLE subtests
4. ABE subtests and SAT subtests (long-term students)
5. ABLE subtests and SAT subtests (long-term students)

Table 81 presents correlation matrices for these tests. Duplications in correlations between subtests from sample to sample are omitted from the table.

The table reveals that all the tests and subtests are highly intercorrelated. The rank order correlation coefficients range from .48 to .86 and all are statistically significant. It is clear therefore that all of the tests are, to a significant extent, measuring the same or related processes. However, some of the tests appear to be more closely interrelated than others.

The ABLE Vocabulary subtest is the only one that does not correlate beyond the .61 level with any other test. It is assumed that the systematic lower correlation coefficients obtained with the ABLE Vocabulary subtest can be accounted for by the differences in both the test structure and the administration of this subtest, relative to the other tests. The Gates, ABE Word Recognition, ABE Reading Comprehension, ABLE Reading, SAT Word Meaning and SAT Paragraph Meaning all require that the person being tested, read. The ABLE Vocabulary on the other hand is read to the student, and requires no reading ability on his part. While reading ability and auditory vocabulary are probably highly related, and the ability to understand spoken words is probably generally related to the ability to understand written words, the processes involved in reading tests and in auditory-recognition tests are different. Therefore, the correlation between such tests should not be as high as the correlations between tests measuring the results of the same process. As might be expected, the ability of adult illiterates to recognize spoken words, as in the administration of the ABLE Vocabulary test, is substantially better than their ability to recognize written words (see Table 83).

TABLE 81

INTERCORRELATIONS AMONG TESTS FOR DIFFERENT STUDENT SAMPLES

ABE SUBTESTS and GATES
(N = 31)

	ABE Reading Comprehension	Gates
ABE Word Recognition	.77*	.83*
ABE Reading Comprehension		.81*

ABLE SUBTESTS and GATES
(N = 55)

	ABLE Reading	ABLE Spelling	Gates
ABLE Vocabulary	.61*	.51*	.54*
ABLE Reading		.86*	.82*
ABLE Spelling			.83*

*Significant at .001 level

(Table 81 continued)

TABLE 81 (Continued)

INTERCORRELATIONS BETWEEN TESTS FOR DIFFERENT STUDENT SAMPLES

ABE SUBTESTS and ABLE SUBTESTS
(N = 25)

	ABLE Vocabulary	ABLE Reading	ABLE Spelling
ABE Word Recognition	.52**	.72*	.50**
ABE Reading Comprehension	.48***	.72*	.58**

ABE SUBTESTS and SAT SUBTESTS
(N = 18)

	ABE Word Recognition	ABE Reading Comprehension
SAT Word Meaning	.84*	.86*
SAT Paragraph Meaning	.74*	.79*

ABLE SUBTESTS and SAT SUBTESTS
(N = 32)

	ABLE Vocabulary	ABLE Reading
SAT Word Meaning	.57*	.81*
SAT Paragraph Meaning	.48**	.72*

*Significant at .001 level
**Significant at .01 level
***Significant at .05 level

B. Comparability of Student Samples Tested

The intercorrelations above deal with the relative rankings of the same students on different tests, and the extent to which the various tests measured comparable abilities. In this section, the focus is the grade level estimate of students' ability as measured by the different tests.

In order to compare the reading tests of the new and original batteries, it was necessary to determine whether or not students being tested had had basically comparable initial reading ability. The Gates was included in both batteries of tests as the determining instrument with regard to the equivalence of reading ability of students tested with the two batteries in the various samples. In addition, the Gates provided a basis for comparing students who had taken the ABE with those who had taken the ABLE as part of the new battery.

Median grade level scores on the Gates for the major samples compared are shown in Table 82. Where long attending students had been tested on the Gates as part of the original and new batteries, the more recent Gates scores were used.

It is evident from Table 82 that the overall median grade level on the Gates, obtained by the students who took the ABLE and ABE, 3.1 and 3.5 respectively, matched closely the 3.2 median grade level on the Gates of the original battery sample.

TABLE 82

COMPARISON OF STUDENT SAMPLE GROUPS FOR ORIGINAL AND NEW TEST BATTERIES BY MEDIAN GRADE

GATES ORAL READING TEST

Student Samples	Number of Students	Median Grade on Gates
Original Battery Sample	415	3.2
New Battery Samples		
ABLE Sample	58	3.1
ABE Sample	26	3.5

The student group which composed the new battery sample was further subdivided into: 1) groups of students who had been in the program for a long period of time and 2) those students new to the program at the time the Gates test referred to in Table 82 was administered. These data and their implications are discussed in section D of this chapter.

C. Median Grade Levels on Tests of Various Skills

The median grade levels derived for each of the subtests of the ABLE, ABE, and SAT tests are presented in Table 83.* In this table, subtests which deal with the same type of skill are grouped together for purposes of comparison. Specifically, the tests dealing with "knowledge of words" comprise the first grouping and include the ABLE Vocabulary, ABE Word Recognition and SAT Word Meaning. The second grouping deals with "reading comprehension" and includes the ABLE Reading, ABE Reading Comprehension and SAT Paragraph Meaning. A third grouping, "Spelling," has only the ABLE Spelling test since grade level equivalence scores for the SAT Spelling test are not available.

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*The assumption has been made throughout this and previous reports that the tests used do not provide measures based on ratio or interval scales. In view of this limitation, medians rather than means have been used throughout as estimates of central tendency. In order to permit comparison with other published results, the means and standard deviations on the ABLE and ABE subtests have been computed and are noted here below.

Test	Subtest	Mean Grade	Standard Deviation of the Mean
ABLE	Vocabulary	4.9	1.6
	Reading	3.9	2.3
	Spelling	2.2	1.4
ABE	Word Recognition	3.4	2.3
	Reading Comprehension	2.9	2.0

Examination of Table 83 reveals several findings the implications of which are subsequently discussed more fully. First, as previously discussed, the ABLE Vocabulary subtest yields a distinctly high median grade level compared to the other subtests.

Second, there is considerable variability among skills, in that the grade levels associated with word knowledge are systematically higher than those associated with reading comprehension. This pattern is consistent across all three tests (ABLE, ABE, and SAT).

For the ABLE subtests, chi square comparisons indicate that significantly more students performed at a higher level on vocabulary than on either reading or spelling, and that significantly more students performed at a higher level on the reading than on the spelling subtest (all p's smaller than .001). On the ABE, while the trends are similar, the differences are not statistically significant.

Finally, it appears that with the Projects' student population the ABLE subtests generally provide higher estimates of grade level than those of the ABE, and that subtests of both provide higher estimates than those of the SAT. The latter subtests, it will be recalled, were the chief instruments of the original test battery for assessing the students' skills before, and after, training.

TABLE 83

COMPARISON OF STUDENTS' MEDIAN GRADE LEVELS ON TESTS OF VARIOUS SKILLS (ABLE, ABE AND SAT SUBTESTS)

Skill/ Test	Number of Students	Median Grade Level	Range
Word Knowledge			
ABLE Vocabulary	92	5.9	1.0 - 6.0
ABE Word Recognition	30	3.5	0.0 - 7.9
SAT Word Meaning	348	2.8	0.0 - 9.5
Reading Comprehension			
ABLE Reading	92	3.4	1.0 - 6.0
ABE Reading Comprehension	30	2.2	0.0 - 7.5
SAT Paragraph Meaning	315	2.2	0.0 - 9.5
Spelling			
ABLE Spelling	92	1.6	1.0 - 6.0

Table 84 illustrates another comparison involving the ABLE and ABE tests -- this time with a sample of 25 students who had taken both.* The distribution of the grade level medians presented in Table 84 parallels that in Table 83, suggesting that the pattern of grade levels provided by the different tests is reliable. Comparisons indicated that 20 out of the 25 students were higher on the ABLE Vocabulary than on the ABE Word Recognition (chi square significant at the .02 level of confidence). Comparison of the ABLE Reading subtest with the ABE Reading Comprehension subtest shows that 14 out of the 25 students performed higher on the ABLE, but this result is not statistically significant at the .05 level.

It would thus appear that the consistent differences in performance on the ABLE and the ABE are not due to differences between the students taking the tests, but rather to the tests themselves.

TABLE 84

COMPARISON OF MEDIAN GRADE LEVELS FROM ABLE AND ABE SUBTESTS FOR THE SAME STUDENTS
(N = 25)

Test	Subtest	Median Grade
ABLE	Vocabulary	5.9
ABE	Word Recognition	3.3
ABLE	Reading	3.0
ABE	Reading Comprehension	1.7
ABLE	Spelling	2.3

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*Comparison of groups taking the tests in differing order (ABE then ABLE, or ABLE then ABE) showed no systematic differences attributable to the order of testing. Also, it is unlikely that differences could be attributed to intervening instructional hours. The median hours of instruction intervening between tests was 20.5, which is far short of the amount which the test designers consider adequate for measurable improvement to be achieved. For instance, the publisher of one of the tests used by the Project suggested 200 hours of instruction as the minimum required before measurable improvement could be expected.

Although direct comparison between performance on the ABLE and ABE is permissible, strictly speaking, for several reasons such direct comparison between either of these tests and the SAT tests is not. For example, the ABE and ABLE were given at about the same time, whereas the SAT tests were given much earlier. Of greater importance, is the fact that the SAT tests were taken when the students first entered the program, whereas the ABE and ABLE tests were taken by both new students and students who had been in the program for some time.

The most legitimate comparison, then, should be between performance on the SAT's and performance on the ABE or ABLE of those students who were new to the program. A breakdown of the ABLE results for new and previously enrolled students is presented in Table 85 in the following section. It can be noted that although performance of the new students on the ABLE is lower than that of the students who entered training earlier, it is still substantially higher than the performance shown for the SAT's in Table 83.

D. Reading Improvement Estimates from New Battery Tests

A limitation in the evaluation of the new reading tests for the purpose of measuring reading improvement was the brevity of additional instructional time with the same students, after their first testing period, and before the closing date for data collection. However, another way of assessing the sensitivity of the tests to student reading improvement was employed. The test scores of new students were compared with those of students who had been in the program for substantial periods of time already. The assumption was that any reading improvement by the long attending students should be reflected in grade levels superior to those of the new registrants. Again, it was necessary to establish first that the long attending students, on the average, were similar to the new students in reading ability at the time of their entry into the program. For purposes of the above comparisons, the Gates test once again served as the criterion measure for determining such similarity, since there were some long attending students in the Project who had taken the Gates as part of the old battery and again later as part of the new battery.

Relevant median grade level scores for these comparisons on the Gates test and on the ABLE Vocabulary and Reading subtests are presented in Table 85 for a sample of 58 students who took both the Gates and ABLE.*

The first row of Table 85 shows data for the long attending students who had received, before being tested on the new battery, a median average of 170 hours of instruction, with a range in the group of from 40 to 350 hours. This group improved from a median grade level of 2.6 when originally tested on the Gates in the old battery, to a median grade of 3.4 on the Gates when retested with the new battery. The second row shows the data for the new students who entered the program after the new test battery was introduced. They received a median grade of 2.6 on the Gates upon entering, indicating that their initial level was identical to the initial level of the long attending students, and substantiating the general comparability of the two groups for this comparison. Important to note also is the fact that, when both the Gates and ABLE tests were given at about the same time to the same group of students, estimates of median grade provided by the ABLE were substantially higher than those provided by the Gates.

Looking now to the grade levels obtained by these two samples on the ABLE subtests, in the last three columns of the table it can be seen that the long attending students attained median scores superior to those of the new students on the Vocabulary subtest (long attending students: 6.0; new students; 5.3) and Reading subtest (long attending students: 4.2; new students: 2.4) as well as on the Spelling subtest (long attending students: 1.8; new students: 1.1). In light of the equivalence of the groups on their respective initial Gates tests, the difference between the groups on the ABLE subtests may be attributed to the long-term students' training in the Project and the ability of the ABLE subtests to measure improvement.

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*Comparable data for the ABE test are omitted since only sixteen long attending and nine new students were available, rendering unreliable medians. The general trend, however, was quite similar to that described in the test for the ABLE sample.

TABLE 85

COMPARISON OF MEDIAN GRADE LEVELS FOR LONG ATTENDING STUDENTS AND NEW REGISTRANTS ON THE GATES AND ABLE SUBTESTS

Sample	MEDIAN GRADE				
	Original Battery Gates	New Battery Gates	ABLE Vocabulary	ABLE Reading	ABLE Spelling
Long attending students (N = 39)	2.6	3.4	6.0	4.2	1.8
New students (N = 19)	None	2.6	5.3	2.4	1.1

There can be no exact comparison between the improvement measured for the long attending students, and that described in the previous chapter for groups tested in follow-up procedures after different intervals of instruction.* However, in preliminary exploration of the new tests, one kind of comparison is made in Table 86. The first column of numbers there shows the median change observed from 150-hour retesting with the original battery (see Table 74 in Chapter IV). The second column of numbers in Table 86 shows the differences between group medians of the long attending students and new students, from the new battery of tests. Apparent improvement on the Gates is about the same for the two studies. However, the median from the ABLE Reading subtest, indicating the greatest amount of improvement, is quite different from the median change obtained from the SAT Paragraph Meaning test, which showed the least improvement on the original battery. These findings suggest that the ABLE Reading test may be more sensitive to reading improvement for this adult student population than any of the other reading tests examined.

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*Reasons for this limitation are: 1) that for the sample groups the hours of instruction are different, and 2) that the statistic of median change used in Chapter IV, where each student is compared with himself, cannot be duplicated where independent samples of students are being compared.

TABLE 86

COMPARISON OF READING IMPROVEMENT: BY 150-HOUR RETEST SAMPLE ON ORIGINAL BATTERY AND NEW BATTERY READING TEST SAMPLE

TESTS	Median Change Original Battery Initial to 150-hour Retest Sample	TESTS	Median Difference New Battery Samples: a) Median Attendance 170 Hours, and b) New Students
Gates	0.6	Gates	0.8
SAT Word Meaning	0.7	ABLE Vocabulary	0.7
SAT Paragraph Meaning	0.3	ABLE Reading	1.8

III. SUMMARY

The purpose of testing with the new battery just described was to explore in a preliminary but relatively controlled fashion the use of these tests with adult illiterates. The use of the new test battery for research purposes, however, was necessarily tempered by the educational requirements of the adults volunteering to learn how to read. The study of the new tests has various shortcomings. For example, the use of these began too late in the program to have many students ready for retesting after a meaningful interval of instruction. Further, since both long attending and new students were tested, the test results are based on students with differing numbers of hours of instruction. As a consequence of these and other difficulties, the findings of this chapter, summarized below, must be regarded as tentative.

A. Findings

- All reading tests of the old and new batteries are significantly intercorrelated (SAT Word

- Meaning, SAT Paragraph Meaning, Gates Oral Reading, ABLE Vocabulary, ABLE Reading, ABLE Spelling, ABE Word Recognition, ABE Reading Comprehension), indicating that similar processes are involved in performance on all of these tests.

- The ABLE Vocabulary test is somewhat less strongly correlated with the other tests, than are those tests with each other. This finding suggests that the ABLE Vocabulary, while significantly related to the others, may measure somewhat different processes than do the others.

- Comparison of the median grade levels achieved by students on the various tests shows the ABLE Vocabulary to yield a distinctly high estimate of grade level.

- Median grade levels associated with "word knowledge" (ABLE Vocabulary, ABE Word Recognition, SAT Word Meaning) are consistently higher than the grade levels associated with "reading comprehension" (ABLE Reading, ABE Reading Comprehension, SAT Paragraph Meaning).

- Overall, grade level results are highest for the ABLE,,next highest for the ABE, and lowest for the SAT.

- Comparing performance of long attending and new students on the new battery; improvement was evident for the long attending students, roughly comparable to that observed in follow-up testing after 150 hours of instruction. Some tendency for the ABLE Reading test to be more sensitive than the SAT Paragraph Meaning test to improvement in reading comprehension seemed likely.

B. Discussion

The major factor in these findings which deserves further discussion is the distinctness of the ABLE test. The ABLE is distinct in that: 1) the Vocabulary subtest not only yields an inordinately high grade level but is also less highly correlated with the other subtests in the batteries; and 2) the ABLE Reading subtest yields higher, although not statistically significant, grade levels than the ABE Reading Comprehension subtest.

The differences in results, obtained with the ABLE and ABE must be viewed in relation to the structure and administration of each test. While both the ABLE Vocabulary and ABE Word Recognition focus on word knowledge, they are quite different in structure.

- On the ABLE Vocabulary, a sentence is read to the student and he must choose one of three words, also read to him, which best completes the thought. He reads neither the sentence nor the alternative choices himself. The ABE Word Recognition test, on the other hand, requires the student to read both the sentence and the alternative answers.

- The ABLE Vocabulary subtest, by eliminating all reading, permits the student to use the interpersonal verbal skills which he has been able to develop in his day to day adaptations. While his vocabulary, thus measured, may have been affected by a lifetime of inability to read, he is able to convey vocabulary he has learned through media other than reading. (Similar points pertain to the WAIS Vocabulary test discussed in the next chapter.) The fact that no reading is involved in the ABLE Vocabulary also accounts for the relatively lower intercorrelation of the ABLE Vocabulary with the other tests which do require the student to read. The ABE Word Recognition subtest presents four alternative answer words to choose from, rather than three as on the ABLE Vocabulary. This form both reduces the probability of a correct answer achieved through guessing on the ABE, and increases the complexity of the answer selection task for the student.

- The ABLE Reading subtest yields a slightly higher estimate of reading ability than does the ABE Reading Comprehension subtest, but the difference is not statistically significant. On the ABLE Reading subtest, a short paragraph or sentence is presented and the student must read it silently to choose one of three words which best completes the thought. On the ABE Reading Comprehension, on the other hand, the student must read a considerably longer paragraph, then read questions pertaining to the paragraph, and finally choose either a single word or a phrase, which may be as long as ten words, out of four alternative choices.

A final implication which may be drawn, not unlike that drawn at the end of the last chapter, is that the concept of grade level is tenuous when applied to populations of adults such as those in the Project for Adult Literacy. As this chapter has shown, sometimes subtle differences in test construction and administration may yield important differences in performance level. Generally, it would be expected that a majority of children in a particular grade would have measured levels in various abilities clustered closely around that grade level. Among the volunteer illiterate adult students of this Project, however, one finds sizeable differences in grade level from skill to skill. The experience of this Project points to the need for concepts for measuring achievement which are more appropriate for conceptualizing the problem of adult illiteracy and are more sensitive to individual differences between students.

CHAPTER VI

RESULTS OF ASSOCIATED TESTS

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RESULTS OF ASSOCIATED TESTS

The test battery administered to incoming students included tests designed to measure three factors believed to be associated with reading ability. These were: 1) general intelligence, 2) psychological maturity or development, and 3) perceptual-motor functioning. The tests in the original battery, used to measure each of these factors, are discussed critically in Appendix E.

In this chapter, four applications of the data collected with the associated, or "non-reading," tests are examined.

> Results of the associated tests are used to describe the Project's student population in addition to the demographic descriptions already presented in Chapter II.
>
> Relationships between these tests and selected demographic characteristics of the students are discussed.
>
> Relationships between these tests and initial performance on selected reading tests are reported.
>
> Comparisons are made between the various associated tests.*

The associated "non-reading" tests discussed here include:

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*No systematic attempt was made to relate results obtained with these tests to reading improvement scores based on follow-up retest data, because generally little consistent reading improvement was shown before the 150-hour retests. The number of students who were retested after 150 hours of instruction was small. Since some of these had not taken the associated "non-reading" tests, the sample was further diminished to a degree that made median comparisons infeasible statistically.

Original battery associated tests:

Lorge-Thorndike Intelligence Tests (Lorge-Thorndike)
Draw-a-Person Test (DAP)
Berea Visual-Motor Gestalt Test (Berea)

New battery associated tests:

Wechsler Adult Intelligence Scale, Vocabulary Subtest (WAIS Vocabulary)
Bender Visual-Motor Gestalt Test (Bender)

I. INTELLIGENCE TESTS

A. Testing and Sampling Procedures

Two different tests of intelligence were used: the Lorge-Thorndike Intelligence Test: Non-Verbal Battery; and the Wechsler Adult Intelligence Scale, Vocabulary Subtest. The Lorge-Thorndike was administered to 262 students between July 1965 and April 1968; the WAIS Vocabulary to 99 students between July 1967 and April 1968.

In administering the old battery, the reading tests were given prior to the associated tests since the reading data were necessary for screening and placement and were considered the most crucial data. Since some students dropped out of the program before the completion of their testing, students for whom Lorge-Thorndike results were available were fewer than the students for whom other original battery reading tests results were available.

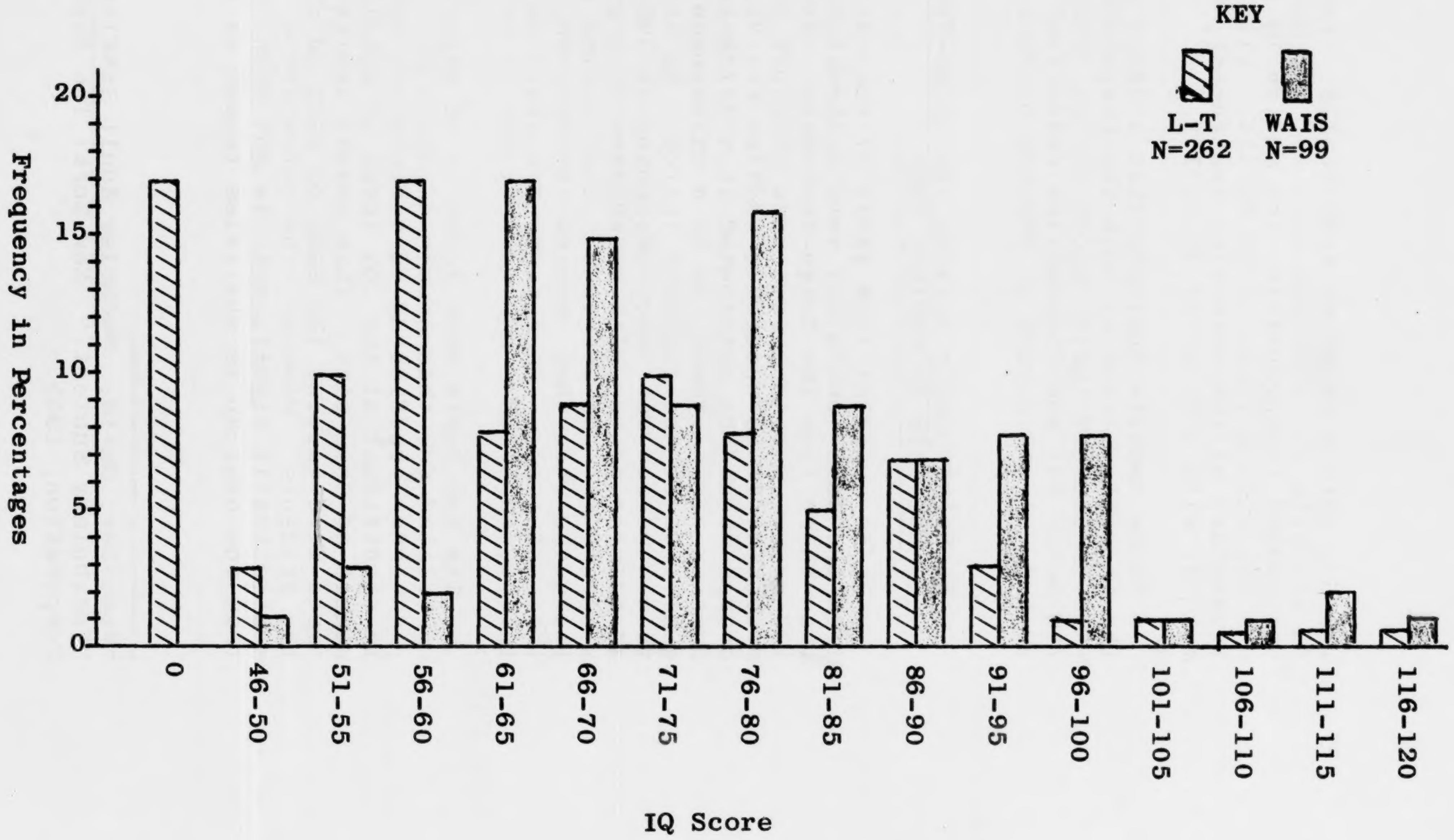
B. Results of IQ Testing

1. Distribution of Scores

Frequency distributions of the scores obtained for both IQ tests are presented in Figure 2. Sixteen percent, or 42 of the students, were unable to cope with the demands of the Lorge-Thorndike and received a zero. Zero IQ indicates only that the test for these students was inappropriate and invalid. For the 262 students taking the Lorge-Thorndike, the median IQ

FIGURE 2

COMPARISON OF LORGE-THORNDIKE AND
WAIS VOCABULARY IQ DISTRIBUTIONS



was 63, with a range of zero to 116. Excluding the 42 students who obtained zero and for whom the test was judged inappropriate, the median IQ for this group was 68, with a range of 50 to 116. With the WAIS Vocabulary as the measuring instrument, the median IQ was 76, with a range of 46 to 112.

These results indicate that a large proportion of the students tested on both the Lorge-Thorndike and WAIS Vocabulary tests, score in the "mental defective" (IQ below 70) and "borderline defective" (IQ between 70 and 79) categories as defined by Wechsler.*

2. Relationship between the Lorge-Thorndike and the WAIS Vocabulary Tests

It is apparent from Table 87 that students' scores from the WAIS Vocabulary were systematically higher than those from the Lorge-Thorndike. However, since the scores for each test were obtained for different students, it is uncertain whether the difference in scores should be attributed to a difference in the demands of the tests, or to a difference in the abilities of the students tested. An attempt to answer this question was made, beginning in July 1967, by administering the WAIS Vocabulary to a group of 34 students who had originally been tested with the Lorge-Thorndike when they entered the program. A substantial time interval -- as long as two years in some cases -- intervened between administrations of the tests.

The two tests were found to be significantly correlated for this sample of students. The Spearman rank order coefficient of correlation was .45, which is significant at the .01 level of confidence for a sample of this size. This result indicates that both tests were tapping the same or related abilities of the students. However, the correlation, although statistically significant, is not high, indicating that the overlap in abilities tested is far from complete. Furthermore, the measures of central tendency and dispersion show consistent differences between the tests. These statistics are presented in Table 87.*

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*Wechsler, David. Wechsler Adult Intelligence Scale, "Vocabulary Subtest." New York: The Psychological Corporation, 1955.

TABLE 87

COMPARATIVE IQ MEASUREMENTS OF ONE STUDENT GROUPING: WAIS VOCABULARY AND LORGE-THORNDIKE TESTS
(N = 34)

Tests	Median IQ	Range of IQ's
WAIS Vocabulary	76	46 - 96
Lorge-Thorndike	61	50 - 103

The median IQ obtained on the WAIS Vocabulary for this subsample of students is identical to that of the larger sample. The median IQ obtained on the Lorge-Thorndike is slightly lower than that obtained for the larger sample.

The distribution of results on the tests, as presented in Figure 2, can also be used to compare the tests. The shape of the distribution for the WAIS Vocabulary approximates a normal curve. The distribution for the Lorge-Thorndike is markedly skewed, demonstrating that a greater proportion of the students' scores cluster below the average.

In view of these results, it appears that the differences obtained between the two tests in the larger sample were probably due to inherent differences in the tests and not due to differences among the students tested. Furthermore, although both tests measured some common factors, as indicated by the consistent relative standing of students on the two tests (rho of .45), the two tests are far from identical. Even though they differed in what, or how they measured, it is clear that the WAIS Vocabulary, relative to the Lorge-Thorndike, provided a higher estimate of intelligence. These data do not speak directly to the question of which test more validly estimates those aspects of intelligence which are basic to learning how to read.

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*The measure of central tendency used throughout this report is the median (see footnote page V-9, Chapter V). For purposes of comparison with other reports in the literature, the means and standard deviation for the WAIS Vocabulary and Lorge-Thorndike are respectively 77 (s.d. 11) and 67 (s.d. 14). These means are quite close to the medians shown in Table 87.

It is speculated that the Lorge-Thorndike is more sensitive than the WAIS Vocabulary to those processes which are least developed by the Project's students, since it requires the student to read and relies heavily on graphic materials. The WAIS Vocabulary, on the other hand, relies on verbal interchange between examiner and student. The student need neither read nor write. The WAIS Vocabulary, therefore, probably taps those aspects of intellectual functioning most highly developed in these students and most responsible for their relatively adequate daily adjustment (cf. discussion of ABLE Vocabulary test in Chapter V).

3. Relationship Between IQ and Selected Demographic Characteristics

A series of analyses was undertaken to determine whether IQ was related to selected demographic characteristics of students or to student attendance. Since both testing measures of IQ had been used, the study offered further opportunity to evaluate the relative usefulness of those tests.

In Table 88, results of these analyses are presented separately for the Lorge-Thorndike and WAIS Vocabulary. Each section of the table shows in parentheses the number of persons involved in the study. The main entries refer to the percent of students, grouped according to race, sex and school history, whose measured IQ's were above or below the median IQ. All students who had taken the IQ tests and for whom relevant demographic information was available were included.

The data discussed below were selected from a large series of analyses of initial test performance and selected demographic characteristics. The complete series is presented in Appendix A.

- No systematic relationship emerges between the Lorge-Thorndike and race. However, the relationships between the Lorge-Thorndike and the other variables are significant.

- The Lorge-Thorndike IQ is systematically related to sex, with a larger percentage of men than of women having achieved IQ's above the median.

- The Lorge-Thorndike IQ and school history are systematically related in that the higher percentage of students with IQ's below the median were those who had completed less than six grades at school; while the higher percentage of students with IQ's above the median had continued at school beyond the seventh grade.

It is important to note that those students who reported having gone to special classes were almost equally divided above and below the median IQ, rather than being restricted to the lower IQ group. Two considerations in relation to this finding, however, are: 1) that the median IQ for this group of students was substantially below average to begin with; and 2) that it is likely that some of these students had been assigned to special classes specifically because of reading disabilities or emotional or behavioral problems unrelated to general intelligence.

An unusually high proportion of long attending students had IQ's below the median, as measured by the Lorge-Thorndike; while the intermediate attenders -- those with hours of instruction between 25 and 105 -- tended towards IQ's above the median. Students who remained in the program for less than 25 hours of instruction were divided more or less equally between these groups, with relatively high and relatively low IQ's.

The relationships between IQ as measured by the WAIS Vocabulary subtest, and the same variables, present a similar picture. However, none of these are statistically significant. The lack of the statistical significance with the WAIS Vocabulary results may be due to the fact noted earlier: that the students scoring below the median on the WAIS Vocabulary did not perform as poorly as the students scoring below the median on

Lorge-Thorndike. Figure 2 shows strong negative skewing of the Lorge-Thorndike results, whereas the WAIS Vocabulary scores give a more normal distribution. In short, students whose measured IQ fell above or below the median on the Lorge-Thorndike probably differed more from one another than did those whose measured IQ fell above or below the median on the WAIS Vocabulary.

TABLE 88

RELATIONSHIP BETWEEN STUDENTS' SELECTED DEMOGRAPHIC CHARACTERISTICS AND LORGE-THORNDIKE AND WAIS VOCABULARY IQ SCORES

	Lorge-Thorndike IQ Median IQ = 61			WAIS Vocabulary IQ Median IQ = 76		
	Number of Students	Percent Below Median	Percent Above Median	Number of Students	Percent Below Median	Percent Above Median
Race						
White	(184)	46	54	(72)	47	53
Negro	(62)	57	43	(11)	64	36
Sex						
Men	(188)	44	56	(71)	47	53
Women	(74)	64	36	(24)	50	50
x^2: $p < .01$						
School History						
0-3rd	(22)	68	32	(11)	55	45
4th-6th	(41)	61	39	(14)	57	43
7th-9th	(56)	38	62	(15)	26	74
10th or more	(30)	30	70	(12)	42	58
Special class	(109)	51	49	(41)	51	49
x^2: $p < .02$						

4. Relationship Between IQ Tests and Initial Reading Tests

Wherever there was a large enough sample of students who had received one of the IQ tests, as well as one or more of the reading tests, correlations could be determined. Such correlations were computed between each of the IQ tests and all subtests of the original and new batteries, with the exception of those between the Lorge-Thorndike and the ABE (N=8). All other sample groups examined ranged in size from 31 to 201 students.

The correlations of the Lorge-Thorndike with the reading tests are presented in Table 89, and those of the WAIS Vocabulary with the reading tests are in Table 90. All of the reading tests are significantly correlated with both of these two measures. It is interesting to note that the relatively high correlations hold, even under conditions in which the reading tests and intelligence test were administered with a long interval of time between them. For example, the Lorge-Thorndike and the new battery subtests of the ABLE were separated by approximately 170 hours on the average.

The differences in the magnitude of the correlations seem to be due to structural differences among the reading tests which have been discussed already in Chapter IV. The correlations between the WAIS Vocabulary and the three ABLE subtests are systematically higher than those between the WAIS Vocabulary and the ABE subtests. It should be remembered, in this context, that the WAIS Vocabulary is a "non-reading" measure of intelligence, and that the ABLE does not demand as much reading competence as the ABE. Moreover, it is not surprising that the highest correlation is between the WAIS Vocabulary and the ABLE Vocabulary subtest, since the IQ scores reported are based solely on the vocabulary subtest of the WAIS.

Overall: examination of Tables 89 and 90 clearly demonstrates that initial reading ability, as defined by various reading tests, is significantly related to intelligence, as defined by the two IQ tests. What makes the relationship of particular interest is that it is found within a population clearly defined as functionally illiterate.

TABLE 89

RANK ORDER CORRELATIONS OF LORGE-THORNDIKE IQ's WITH INITIAL SCORES ON VARIOUS READING TESTS

Test	Number of Students	Rank Order Correlations with Lorge-Thorndike
Gates	201	.36*
SAT Word Meaning	201	.40*
SAT Paragraph Meaning	201	.46*
ABLE Vocabulary	31	.64*
ABLE Reading	31	.63*

TABLE 90

RANK ORDER CORRELATIONS OF WAIS VOCABULARY IQ's WITH INITIAL SCORES ON VARIOUS READING TESTS

Test	Number of Students	Rank Order Correlations with WAIS Vocabulary
SAT Word Meaning	45	.37***
SAT Paragraph Meaning	44	.47**
ABLE Vocabulary	55	.78*
ABLE Reading	55	.50*
ABLE Spelling	55	.47*
ABE Word Recognition	31	.64*
ABE Reading Comprehension	31	.46*
Gates (ABLE sample)	55	.55*
Gates (ABE sample)	31	.50**

*Significant at the .001 level
**Significant at the .01 level
***Significant at the .05 level

II. THE DRAW-A-PERSON TEST

A. Scoring and Sampling Procedures

The Draw-a-Person Test (DAP) is described in Appendix E . It is a widely employed projective test with considerable literature in which normal and deviant performance on the test has been defined in terms of psychological maturity or development. As used by the Project, the test characterized the population of illiterates on a developmental dimension of psychological maturity. It thus provided, in addition to the demographic analyses for examining subgroups in the population, a psychological parameter which held promise of being related to learning how to read.

The criteria used for scoring DAP's of students in the Project were determined on the basis of the published literature concerning the test. Three distinct groups of students were defined by their performance on the DAP:

Group A - with DAP's which reflected "severe impairment"
Group B - with DAP's which reflected "immaturity"
Group C - with DAP's which reflected "average" or "normal" performance for an adult

The list of criteria used for describing and rating the DAP's, as well as sample protocols, are included in Appendix D .

The DAP test was given routinely to all students in the program long enough to have completed the original battery of tests. The results presented below are based on a sample of 73 students whose drawings were analyzed by two psychologists and classified according to the criteria outlined in Appendix D . The interscorer reliability of the two examiners' ratings of the drawings of 52 students was found to be 85%.

B. Results of DAP Testing

1. Distribution of Scores

Distribution of the DAP scores in the three categories is presented in Table 91. These results indicate that over 50% of the students in the study drew the human figure in such a deviant manner as to suggest that they had significant impairment in their psychological functioning. Nineteen percent produced drawings which suggested psychological immaturity. Thus, 73% of the students produced drawings rated as being different from those which clinicians ordinarily expect from an average adult.

TABLE 91

STUDENT DISTRIBUTION BY PERFORMANCE ON THE DRAW-A-PERSON TEST

(N = 73)

DAP Rating	Number of Students	Percent
Impaired	39	54
Immature	14	19
Average	20	27
Total	73	100

2. Relationship Between DAP Performance and Selected Demographic Characteristics

A series of analyses comparing performance on the DAP with race, sex, and school history is presented in Appendix A. The following findings, among others, are apparent in Tables A1, A2, and A3 there.

A statistically significant relationship ($p < .01$) obtained between DAP performance and sex. A greater percentage of the women (37%) than of the men (13%) drew figures suggestive of psychological immaturity; while a larger proportion of the men than of the women produced drawings which were rated "average" or "impaired."

There did not appear to be a relationship between DAP performance and race. There was, however, a tendency for more of the students with a third grade education or less, or with a special class education, to draw figures indicative of psychological impairment than there was for students to do so who had had four or more years of schooling.

3. Relationship Between DAP Performance and Initial Reading Tests

a. The Gates and SAT Tests

In Table 92, median grade level reading scores, from testing on the initial Gates Oral Reading, SAT Word Meaning and SAT Paragraph Meaning tests, are presented for each of the three DAP performance groups.

There is a tendency on all three of these tests for those students distinguished as less impaired by the DAP to have had higher initial reading scores. Chi square analysis, with the categories "immature" and "average" combined, indicated that this relationship is statistically significant for the SAT Word Meaning ($p < .02$) and SAT Paragraph Meaning tests ($p < .05$), but not for the Gates test.

TABLE 92

RELATIONSHIP BETWEEN STUDENTS' DAP PERFORMANCE AND MEDIAN GRADE LEVEL ON INITIAL READING TESTS

Test	Number of Students	Median Grade Level DAP Impaired	DAP Immature	DAP Average
Gates	73	3.1	3.0	3.3
SAT Word Meaning	54	2.6	3.4	4.6
SAT Paragraph Meaning	50	2.1	2.8	3.2

b. ABLE and ABE Subtests

In Table 93, median grade level scores are presented from the initial ABE and ABLE reading tests for each of the three groups of students distinguished by their DAP performances. These results reflect the same general relationship shown in Table 92, although not quite so strongly, due to the instability of median scores obtained with such small samples.

TABLE 93

RELATIONSHIP BETWEEN STUDENTS' DAP PERFORMANCE AND MEDIAN GRADE LEVEL ON NEW BATTERY READING TESTS

Test	Number of Students	Median Grade Level DAP Impaired	 DAP Immature	 DAP Average
ABE Word Recognition	11	1.8	3.3	2.7
ABE Reading Comprehension	11	4.2	4.5	4.1
ABLE Vocabulary	20	5.9	6.0	6.0
ABLE Reading	20	1.8	6.0	6.0

The table indicates that students who drew human figures rated as "impaired" performed most poorly on three of the four tests measuring reading performance. Only one of these comparisons, however, is statistically significant. The DAP and ABLE Reading subtest results are significantly related at the .02 level of confidence, by chi square analysis computed with the categories "immature" and "average" combined.

The results, on both the original and new batteries, seem to show a consistent relationship between DAP performance and reading test scores.

III. THE BEREA AND BENDER VISUAL-MOTOR GESTALT TESTS

A. Description and Purpose of the Tests

The Berea Visual-Motor Gestalt Test (the Berea) and the Bender Visual-Motor Gestalt Test (the Bender) are purported to be measures of visual-motor ability and coordination. The student is required to reproduce a design appearing on each of a series of stimulus cards which are presented one at a time (12 in the Berea and eight in the Bender). The designs are geometric and non-representational. On the Berea the student must reproduce each design from memory, after viewing it for five seconds. On the Bender, the stimulus design remains in view while the student copies it. Thus, the Berea is a measure of accurate recall, as well as of visual-motor coordination. The Bender has been extensively discussed in the literature.

Both tests rest on the assumption that the relative accuracy of the reproductions reflects the integrity of central nervous system functioning. Empirical studies with the Bender have demonstrated that persons with varying degrees of organic impairment have greater difficulty in reconstructing the geometric designs of the test accurately than do persons not thus impaired.* Moreover, literature regarding children tested with the Bender further indicates that children with reading disabilities make more errors than unimpaired children.**

The original decision to select the Berea as the instrument of choice, over the better known Bender, rested in part upon the expectation that the Bender would be too easy for adults. It was believed that the Bender did not present sufficient patterns in which there were complex interior details. Over time, the Project's experience with the Berea led to the decision in July, 1967, to begin utilizing the Bender in some literacy centers. A discussion of the reasons for this shift can be found in Appendix G . Here below, the Project's use of the Berea is discussed, followed by a report of findings with the Bender.

B. Reliability and Validity of the Berea Scoring System

It was necessary to develop a reliable scoring system for the Berea, since available guidelines for interpreting the drawings were too vague to be useful. Appendix G delineates the scoring system as well as the supporting reliability studies.

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*Pascal, Gerald R. and Suttell, Barbara J. The Bender-Gestalt Test Quantification and Validity for Adults. New York: Grune and Strasson, 1951.

**DeHirsch, Katrina, et al. Predicting Reading Failure. New York: Harper & Row, 1966.

The scoring system was based on the signs of organic impairment as defined in the psychological literature on the Bender. At the same time, an attempt was made to assess empirically the validity of the Berea, similarly scored. This attempt could be approached only in the crudest manner, since independent medical diagnoses of organic impairment of the students was not possible within the framework of this Project. The only available data in this respect were the students' own general reports of "physical problems" at the time of registration. Two of the sample groups for the studies reported herein were made up of all students who had reported various organic and/or emotional difficulties on their registration forms, prior to March 1967, the closing date for these studies.

Records of these students were isolated into two groupings for examination. Of these, Group A consisted of 31 students whose reported difficulties included: epilepsy, traumatic injury involving unconsciousness, anomalies suggestive of central nervous system involvement, and retardation. This rather heterogeneous group, grossly viewed as the "organic" group, was compared to Group B, the remaining 25 students who had indicated "other problems". A newly selected Group C, of 20 students who had stated explicitly that they had had "no problems", physical or emotional, completed the three samples compared.

The Berea protocols were scored "blind", with the scorer unaware of the student groupings described above. The median numbers of errors on the Berea for the three groups were: "organic", 10; "other problems", 6; "no problems", 4. Results of the ensuing analysis, presented in Table 94, showed a clear and statistically significant relationship between: 1) the extent, and kind, of physical disabilities reported by incoming students; and 2) the students' performance on a measure of psychomotor functioning. Students whose stated disabilities suggested some neurological component, performed least well on the Berea. Those with other kinds of physical or emotional problems did somewhat better; and those who reported no difficulties achieved the best scores -- that is made the fewest errors.*

TABLE 94

STUDENT DISTRIBUTION BY REPORTED PHYSICAL PROBLEMS AND BEREA TEST PERFORMANCE

Reported Problems	Berea Performance Above Median (More Errors)	 Below Median (Fewer Errors)	Total
"Organic"	24	7	31
"Other problems"	11	14	25
"None reported"	4	16	20
Total	39	37	76

x^2: $p < .001$

A separate analysis demonstrated that these results were not a function of the age of the students. In light of these findings, the Berea was accepted as a crude measure of perceptual-motor difficulties such as are ordinarily found to be associated with organic impairment.

C. Results of Berea Testing

1. Distribution of Scores

In order to assess the extent of perceptual-motor difficulties in the Project, a sample of 111 students was drawn at random from those students who had not responded at all to the questions regarding past history of physical and emotional disability on the initial registration form. The median Berea score for this group of 111 students was eight errors. This score is identical to that obtained for the group of students on which the validity study was based, suggesting that those students who did not respond to the question on physical and emotional problems were probably distributed -- with respect to perceptual-motor functioning -- in approximately the same way as those who did answer the question. Assuming that the Berea test is valid, the scores of this group indicate that a sizable portion of students in the Project performed as do people who have perceptual-motor difficulties, since 25% of these 111 students made more errors than the median number of errors (11) made by the "organic" students.

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*The difference in Berea error scores among the three groups was analyzed statistically by chi square, by first computing an overall median error score for the three groups combined. This score, 8, was then used to divide the scores into those above and those below this median score. The number of students in each of the three groups falling above and below the median was then determined.

2. Relationship Between the Berea and Student Demographic Characteristics

A series of analyses was done comparing Berea performance with selected demographic characteristics of students. Results can be found in Appendix A, Tables A1, A2, A3, and are discussed below.

No statistically significant relationships emerged between Berea performance and race, sex or school history. However, with respect to schooling, a tendency was noted for students who had completed more years of school to have better Berea performances; and for a greater proportion of the students who had been taught in special classes for slow learners to have poorer Berea performances.

3. Relationship Between the Berea and Initial Reading Tests

The relationship between students' performance on the Berea and their initial reading ability was examined for the Gates, the SAT Word Meaning and Paragraph Meaning, and ABE and ABLE subtests. The number of students involved in the Gates and SAT test performance comparisons was 101. The number of students involved in the ABE and ABLE test performance comparisons were respectively 13 and 33.

Overall there appeared to be a slight tendency for poor performance on the Berea to be related to poor initial reading ability, but no relationship was statistically significant as determined by chi square.

D. Initial Study of the Bender

1. Bender Scoring

The Bender-Gestalt was adopted for use in the Project in July, 1967, and scored using the Pascal and Suttell scoring system.* This scoring system, like that developed by the Project staff for the Berea, involves counting certain specified errors. The higher the score, the more the errors, the worse the performance.

Before using the Pascal and Suttell scoring system with Project students, the test was administered to a group of 21 Project tutors who were asked to take the test as part of the routine center procedures. None refused. The results yielded a mean score of 50 with a standard deviation of 14. These results correspond exactly to those reported by Pascal and Suttell for the standardization population, and suggests that the test procedures and scoring used were consistent with the published standards.

2. Distribution of Scores

The Bender was administered to a total of 98 students. The mean score on the Bender for this student sample was 77, falling almost three standard deviations beyond the mean of the normal group upon which the test was standardized. The median for the student sample was 68, with a range of scores from 36 to 187. These results indicate that better than 50% of the sample produced markedly deviant test performances.

3. The Relationship Between the Bender and Student Demographic Characteristics

Analyses of Bender scores in relation to the demographic categories of race, sex and school history did not yield any significant relationships. Tendencies were noted, however, for fewer women to perform accurately on the test than for men to do so, and for fewer Negroes than whites to perform accurately. Results are presented in Appendix A, Tables A1, A2, and A3.

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*Pascal and Suttell, op. cit., p. 28.

4. Relationship Between the Bender and Initial Reading Tests of the New Battery

Scores on the Bender were compared with scores on the Gates, ABE and ABLE in order to determine if any meaningful relationship existed between this measure of psychomotor functioning and initially tested reading ability. The correlations of the Bender with these reading tests are presented in Table 95. Unfortunately, there were too few students who had taken both the Bender and the reading tests of the original test battery to allow for statistical analysis of possible relationships.

TABLE 95

RANK ORDER CORRELATIONS OF THE BENDER WITH INITIAL SCORES ON VARIOUS READING TESTS

Test	ABLE Sample Bender (N=55)	ABE Sample Bender (N=31)	Combined Sample Bender (N=86)
ABLE Vocabulary	-.42*		
ABLE Reading	-.17		
ABLE Spelling	-.20		
ABE Word Recognition		-.09	
ABE Reading Comprehension		-.19	
Gates Oral Reading	-.18	.02	-.21

*x^2: $p < .05$

Although near zero, all but one of the correlations of the Bender with the reading tests are negative. It should be remembered in this context that Bender scores reflect the number of errors made in reproducing the designs; the higher the score, the poorer the performance. Thus, negative correlations indicate that poor performance on the Bender is associated with poor performance on the reading tests.

The fact that the correlations between the Bender and the reading tests are not high, and that only one is statistically significant, should not be taken as a general indication that psychomotor functioning and reading ability are not related. On the contrary, the fact that the median Bender score for Project students was three standard deviations above the score for normal adults, is very strong evidence that these two abilities are interconnected. Moreover, the consistency of the negative correlations between the measures of reading and visual-motor coordination suggests that some constant underlying relationship is being tapped.

IV. RELATIONSHIPS AMONG THE ASSOCIATED TESTS

The purpose of including tests to measure abilities other than reading was to examine the relationship of intelligence, psychological functioning and perceptual-motor coordination to the ability to learn to read.

A further question to be explored was whether the associated tests were related to one another.

To recapitulate, two sets of "non-reading" tests were used: 1)in the original battery: the DAP, Berea and Lorge-Thorndike; and 2) in the revised battery: the Bender and WAIS Vocabulary. The two test batteries were used at different times in the history of the Project, and the number of students who were examined with both batteries was small. The following analyses, therefore, are restricted to comparisons between pairs of tests within the same test battery.*

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*One exception has already been noted in the chapter: a group of 34 students were tested on both the Lorge-Thorndike and the WAIS Vocabulary, and a Spearman Rank Order Correlation Coefficient of .45 was found. This result indicates that both tests were tapping to some extent the same or related abilities in the students.

A. The Original Battery

1. Overview

The statistical relationships between pairs of tests in the original battery are summarized in Table 96, and discussed in the sections which follow. Since one of the tests, the DAP, results in categorized data, chi squares rather than correlation coefficients were computed. The latter statistic is used in comparing the tests in the new battery.

TABLE 96

SUMMARY OF RELATIONSHIPS BETWEEN PAIRS OF TESTS ON THE ORIGINAL BATTERY
(Chi Square Values)

	DAP	Berea	Lorge-Thorndike
DAP	--	2.9	7.4*
Berea		--	20.0**
Lorge-Thorndike			--

* significant beyond the .05 level of confidence
**significant beyond the .01 level of confidence

2. The DAP and Berea

In order to determine whether or not there was an association between psychological maturity as measured by the DAP, and psychomotor functioning as measured by the Berea, the scores of a group of 52 students who had taken both tests were compared in a contingency table.

Although the association between performance on the Berea and performance on the DAP is not statistically significant, a strong tendency was observed. Students who drew human figures rated "average" or "immature" tended to produce Berea protocols that were relatively free of error, while those whose drawings were rated "impaired" more often than not scored poorly on the Berea.

TABLE 97

STUDENT DISTRIBUTION BY DAP RATINGS AND BEREA SCORES

DAP Rating	Berea Performance Above Median (More errors)	Berea Performance Below Median (Fewer errors)	Total
Impaired	15	12	27
Immature and Average	8	17	25
Total	23	29	52
x^2: 2.9 $p < .10$			

3. The DAP and Lorge-Thorndike

The possibility that a relationship existed between intelligence as measured by the Lorge-Thorndike test, and psychological development as measured by the DAP test, was examined by comparing the scores of 53 students who had taken both.

As Table 98 demonstrates, there was a statistically significant relationship between Lorge-Thorndike IQ scores and DAP ratings. Students whose drawings were rated "impaired" tended to have relatively low IQ scores while those whose drawings were rated "average" tended to have relatively high IQ scores. Those whose drawings were considered "immature" were almost equally divided between low and high IQ scores.

TABLE 98

STUDENT DISTRIBUTION BY DAP RATINGS AND LORGE-THORNDIKE IQ SCORES

DAP Rating	Lorge-Thorndike Performance Below Median	Lorge-Thorndike Performance Above Median	Total
Impaired	20	8	28
Immature	4	5	9
Average	4	12	16
Total	28	25	53
x^2: 7.4 $p < .05$ (corrected for continuity)			

4. The Berea and Lorge-Thorndike

To assess the relationship between intelligence and psychomotor functioning in the students, scores on the Lorge-Thorndike were compared with those on the Berea for a group of 101 students who had taken both tests. The results are presented in Table 99.

Here results demonstrate that those students who had the higher IQ's, as measured by the Lorge-Thorndike, performed better on the Berea than those students who had the lower IQ's. Thus, intelligence and psychomoter functioning, as measured by these two tests, are strongly related among the adult illiterates tested.

TABLE 99

STUDENT DISTRIBUTION BY BEREA SCORES
AND LORGE-THORNDIKE IQ SCORES

Lorge-Thorndike Performance	Berea Performance: Above Median (More errors)	Berea Performance: Below Median (Fewer errors)	Total
Below Median	39	13	52
Above Median	15	34	49
Total	54	47	101

x^2: 20.0 $p < .001$

B. The New Battery: WAIS Vocabulary and Bender

An independent estimate of the relationship between intelligence and psychomotor functioning among adult illiterates was obtainable by a comparison of performance on the WAIS Vocabulary with performance on the Bender. For this purpose a new sample was employed, composed of 86 students who had taken both the ABE and ABLE reading tests, and who had also had the WAIS Vocabulary and Bender. Test results for this sample were cross-compared by a Spearman Rank Order Correlation Coefficient. A highly significant ($p < .001$) negative correlation of -.38 was obtained, indicating that the lower the IQ score obtained on the WAIS Vocabulary, the greater the number of errors likely to be made on the Bender, the test of psychomotor functioning.

In validating his scoring system for the Bender, Pascal reported an inverse relationship, which was not statistically significant, between intelligence and the Bender score. Pascal's sample, however, was comprised of persons whose IQ's fell within the normal to superior range, whereas the IQ scores of the sample discussed here were much lower. The median WAIS score in the Project's sample of adult illiterates was 73, a score regarded as representing borderline mental defectiveness. It may be that psychomotor performance and intelligence are related only among those of lower intelligence, or it may be that both are related among those who are unable to read. A choice between these alternatives cannot be made based on the data available in this Project.

V. SUMMARY

A major purpose in including associated or "non-reading" measures in the battery of tests for adult illiterates in this Project was to attempt: 1) to isolate some of the factors associated with the students' serious reading problems; and 2) to understand the ways in which these factors might be influencing their reading ability. Analyses reported in this chapter were made to determine the extent to which general intelligence, psychological maturity, as reflected in the concept of body imagery, and psychomotor integrity were associated with adult illiteracy.

Three kinds of test evidence were investigated: 1) comparison of the performance of the adult illiterates to the performance of literate adults on the associated tests; 2) comparison of students' performance on reading tests and associated tests, within the adult illiterate group; and 3) correlations among the associated tests, of results from within the adult illiterate group.

A. Comparison of the Adult Illiterates' Performance to the Performance of Literate Adults on Associated Tests

The performance of samples of adult illiterates in the Project has been compared to the performance of literate adults with whom the associated "non-reading" tests were originally standardized. This comparison permits some general statements regarding the ways in which adult illiterates differ, from adults who can read, on dimensions other than reading.

1. Intelligence Test Results

The median IQ for 262 students tested on the Lorge-Thorndike was 63. Thus, at least half of the Project's students who were tested with this measure of intelligence scored in the "mental defective" IQ range.

The median IQ for 99 students tested on the WAIS Vocabulary was 76. Thus, more than half of the students tested with this measure of intelligence scored in or below the "borderline defective" IQ range.

2. Draw-a-Person Test Results

Independent evaluation by two clinical psychologists indicated that, relative to drawings of the human figure to be expected from average adults, almost three-quarters of the adult illiterates who were tested, executed drawings which were below average.

3. Visual-Motor Gestalt Test Results

The mean and median scores for 98 students who took the Bender Visual-Motor Gestalt Test were respectively 77 and 68. These results compared poorly to those obtained with the normal sample with which the test was originally standardized, and thus reflected a significant degree of psychomotor impairment.

Although comparable norms are not available for the Berea, experimental and clinical evaluation of the performance of the Project's students in this test supported the conclusions reached with the Bender.

All of these results strongly suggest that in addition to their illiteracy handicap, on the average the adults in the Project's samples were also handicapped by relatively low intelligence, immature psychological development, and perceptual-motor dysfunctioning, as reflected by the battery of tests used. This point is discussed further at the end of this chapter.

B. Comparison of Students' Performance on Reading Tests and Associated Tests Within the Adult Illiterate Group

If the above relationships between literacy and illiteracy and performance on the various associated tests are accepted, the question arises as to whether performance on the "non-reading" tests is related to the level of reading ability of the illiterate adult. In short, do these associated tests discriminate within the illiterate population?

1. Comparison of Reading Test Results to Intelligence Test Results

Rank order correlation coefficients between results on the intelligence tests (Lorge-Thorndike and WAIS Vocabulary) on the one hand, and the reading test results (Gates, SAT Word Meaning, SAT Paragraph Meaning, ABLE Vocabulary, ABLE Reading, ABE Word Recognition, and ABE Reading Comprehension) on the other, were all positive and statistically highly significant.

2. Comparison of Reading Test Results to Draw-a-Person Test Results

A relationship appeared to exist between reading ability and the ability to draw a picture of the human body. All the comparisons between the results of the DAP test and the various reading tests were in the same direction. Each of the comparisons indicated a tendency for the poorer readers to draw the least normal pictures of the human body. Three of the comparisons were statistically significant.

3. Comparison of Reading Test Results to Visual-Motor Gestalt Test Results

Overall, there appeared to be a relationship between performance on the reading tests and performance on the Berea and Bender tests. Those students with the poorer reading abilities in the Project's samples, tended also to make the greater number of errors on the tests of psychomotor functioning. With only one exception -- that between the Bender and the ABLE Vocabulary subtest -- no comparison was statistically significant. However, the fact that each comparison was nonetheless in the same direction, with no exceptions, established a reliable trend.

C. Correlations Among the Associated Tests Within the Adult Illiterate Group

The interrelationships among the associated "non-reading" tests are summarized below:

- The better the DAP performance, the better the Berea performance (.10 level of confidence).
- The better the DAP performance, the higher the Lorge-Thorndike IQ (.05 level of confidence).
- The higher the WAIS Vocabulary IQ, the higher the Lorge-Thorndike IQ (.01 level of confidence).
- The higher the WAIS Vocabulary IQ, the better the Bender performance (.001 level of confidence).
- The better the Berea performance, the higher the Lorge-Thorndike IQ (.001 level of confidence).

D. Discussion of the Findings

Overall analysis of results from the associated tests is complex and not easily arrived at. The discussion which follows highlights certain of the relationships weighed in this chapter, which are considered to be particularly salient. However, conclusions suggested here must be considered in the context of the reservations which have been raised in various sections of this report with regard to the sample sizes, the tests, and the interpretation of results from their use.

Essentially the results obtained with the different tests agree in the following four summary conclusions:

The overall performance of the student samples on the tests of intelligence, psychological maturity, and psychomotor functioning, was well below that reported for normal, literate adults.

Test performances on the above dimensions and the demographic characteristic, "School History," were related, but not closely. Test performances on these dimensions were related also to "Sex"; but no significant relationship was found with "Race."

Students' reading ability at the time of entrance to the program was found to be related to intelligence, psychological maturity, and psychomotor integrity as measured on most, but not all, of the initial reading tests.

In general, the tests of intelligence, psychological maturity, and psychomotor integrity were highly interrelated.

1. Overall Performance of the Students on the Associated Tests

The findings suggest that on all of the three specialized measures of functioning -- general intelligence, psychological maturity and psychomotor functioning -- the performance of the average student in the program was well below what is expected of a normal adult. This interpretation is important, since for at least some of the tests, there is no obvious relationship between the measured area of functioning and the ability to read. For example, there is little reason to anticipate that illiteracy *per se* will handicap an individual's ability to copy designs or draw figures as required by the Berea, Bender, and DAP. These tasks are relatively unfamiliar to most adults, illiterate or not. That the illiterate students perform comparatively poorly on these tests, as well as on the intelligence tests, indicates that their illiteracy may be only one manifestation of more general disabilities.

Regarding the measurement of their intelligence: previous reports of this Project have speculated that the Lorge-Thorndike might be grossly underestimating the IQ of the students. According to their tutors, the discrepancy was striking between the results on the Lorge-Thorndike and the apparent ability of most of the students to cope with their immediate environment. Speculation that the special demands made by the Lorge-Thorndike test itself might account for the results, rather than the intellectual limitations of the students, led to the substitution of the WAIS Vocabulary subtest. Results with it have partially confirmed and partially disclaimed the previous speculation.

The fact that no student obtained zero on the WAIS Vocabulary test, whereas zero was frequently obtained on the Lorge-Thorndike, tended toward confirmation. The fact that the median IQ obtained with the WAIS Vocabulary was fifteen IQ points above that which had been obtained with the Lorge-Thorndike for the same group of students provided further confirmation.

However, the finding that the average IQ, as measured by the WAIS Vocabulary was also in the "borderline" IQ range, indicated that a considerable portion of the students were subnormal in intelligence, as had been indicated by the Lorge-Thorndike.

Regarding the testing for psychological maturity: the system for categorizing DAP protocols in this project provided a rough scale for measuring competence in drawing a human figure. The categories used: "average" (equivalent to normal adult drawing); "immature" (equivalent to childish drawing); and "impaired" (equivalent to drawings from known severely disturbed and neurologically impaired persons), did not pinpoint any one specific psychological process. The DAP has been used in psychological literature to measure intelligence and visual-motor functioning as well. To the extent that the DAP test is related to these two variables, it may also be related to level of education and socio-economic status.

Regarding the measurement of psychomotor functioning: although the Berea and Bender differ somewhat in what they measure, the visual-motor factor is strong in both. As noted, results from both tests confirm that the level of visual-motor functioning of the illiterate student in the Project was distinctly below that to be expected of normal literate adults. While it is recognized that such visual-motor dysfunctioning is linked in psychological literature to structural impairment of the central nervous system, it is also possible that these dysfunctions may be to some extent a functional outgrowth of the limited educational experience characteristic of a large percentage of this student population.

Despite the imprecision of one or another of the tests, and irrespective of the possible causes, the same general picture has tended to emerge when results from the tests were viewed collectively: the average performance of the Project student samples, on all the associated tests, ranked them well below normal adults who are literate.

2. The Competence of the Adult Illiterate Student

Some additional analyses reported in this chapter pertained to differences within the Project's student samples: such as the relationship between associated test results and the different initial reading levels, or different demographic characteristics.

The finding that initial reading abilities, and to some degree level of early schooling,were related to level of performance on the associated tests, suggests that the degree of functional illiteracy was related to the degree of general competence, and to the level of prior education.

While this generalization was not confirmed at a statistically significant level of confidence by every pair of test comparisons made, no such relationship was in the opposite direction to the stated generalization.

One important implication can be drawn from the generalization that, in the adult illiterates studied, the degree of illiteracy was closely related to the degree of general competence. It relates to the problem of fitting the curriculum to the abilities of the student.

The adult illiterates in this Project varied considerably from one another. While the above generalizations have been made about the average student, there were extremes within the population studied, who were competent as defined by measures of intelligence, psychological maturity, and psychomotor functioning. There were others who were by definition less competent than the average student described. The range of competence of the students, as defined by the associated tests, was large; and what may be educationally feasible for students at one extreme of this range may not be possible for students at the other.

A general recommendation which follows from this kind of analysis is that projects working with adult illiterates must make provision for these student differences by utilizing the techniques of special education, as well as those of general adult education. More specific recommendations for adaptation of special education principles to the area of adult education require the direct attention of appropriate specialists.

CHAPTER VII

THE 150-HOUR STUDENT

CHAPTER VII

THE 150-HOUR STUDENT

One goal of the Project for Adult Literacy was to assist students in attaining 150 hours of instruction and to measure their reading progress at that point.* Since relatively few of the students who registered reached that goal and were tested, analyses related to the achievement of those who did is of particular interest. Some information pertinent to a rounded understanding of the 150-hour student has already been presented in Chapter III, pages III-1 through III-6; in Chapter IV, pages IV-16 through IV-25, IV-27; and in Chapter V, pages V-12 through V-16. In Chapter III, circumstances of the Project such as the scheduling of classes and the length of time required by various students to complete the 150 hours of instruction have been discussed. The median span of time was shown to be 17.5 months with a range by individuals of from ten to thirty months in attendance. Chapters IV and V have reported results of reading tests of various 150-hour groupings.

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*While 150 hours of instruction was a Project goal for the student, it was not imparted to him as such. No specific commitment of length of time, or of attainment, was extracted from the student. Most students had the general goal of "learning to read better" or specific goals of their own which were sometimes not immediately shared with center personnel.

In short, the success of the students, the methods, or the Project's training efforts cannot be understood only in terms of the 150-hour measure of attainment. Often students reached their own goals--a common one was to attain a drivers' license--or neared the end of the instructional materials, well before the 150-hour testing period was reached. Given the conditions of the Project it was difficult to anticipate these situations, and therefore to collect pertinent information before students simply failed to reappear at the center having attained what they came for. The Project's efforts to obtain even minimal retest data under such circumstances were almost completely unsuccessful.

This chapter is concerned with two major questions regarding the 150-hour students: 1) which demographic characteristics, if any, distinguished the students who studied for at least 150 hours, from other students in the Project; and 2) what characteristics distinguished the 150-hour students with higher measured reading improvement from those who improved less during that length of instructional time.

I. DISTINGUISHING DEMOGRAPHIC CHARACTERISTICS OF THE 150-HOUR STUDENTS

A. Sampling Procedures

It is important to determine whether there are unique factors about the group of 79 students who attained 150 hours of instruction, as distinguished from the other functionally illiterate adults who volunteered for remedial instruction in the Project, but who did not persevere when the instruction was provided. Two groups were selected for comparative analyses in defining the distinguishing characteristics. The first group was composed of students who had attended for a relatively short period: at least seven hours but no more than 25 hours.* The second group was the total illiterate population reported about herein, of which the 150-hour group and the seven to 25-hour groups were both subsamples.

B. Comparison of 150-Hour Students with Seven to 25-Hour Students and Total Student Population

The demographic information provided by the student registration forms was collated for each of the three groups and is presented in Table 100. Only the major demographic categories were employed, with "Unknown" and "Other" classifications being omitted for simplification. "N", or the number of students included in each comparison, appears at the top of the columns. Numerical entries in the table are the percent of that N in each demographic category.

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* (Second attendance quartile, as seen in Table 45, Chapter III.) The group of students who had been in the program six hours or less (first attendance quartile) was not selected because it was known to have contained students who had registered expecting instruction in speed reading or courses other than literacy training.

Compared to the total student population, as well as to the seven to 25-hour attenders, the 150-hour group contained proportionately more whites, more women, and more persons over 38 years of age. Relatively more of the 150-hour students were single and thus as a group had fewer children. But among those with children, the family size for the 150-hour students was somewhat larger than for the other groups.

The percent of 150-hour students who had been in special classes was considerably higher than the percent of such students in the other two groups. Related to this finding is the fact that relatively more 150-hour students received their early schooling in the Northeast as opposed to the South of the United States. This combination compares to the geographic distribution of the total population, with more special class students having attended school in the Northeast (see Table 42, Chapter II).

Proportionately more of the students who remained for 150 hours were attending in the MCPS system than in the RHG system. However, eleven of these students had been enrolled in centers using the MCPS system prior to government support and the introduction of the RHG method. When the sample is corrected for this inequality, the percents of 150-hour students from MCPS and RHG centers are 65 and 35 respectively. These corrected figures are comparable to those for the briefly attending students and the total population.

In general, the 150-hour students were comparable to the other student groups in level of occupational skill; and the employment status of all three groups was in about the same proportion. No differences between the groups in the source of referral to the Project were evident.

In summary, the major distinguishing characteristics of the 150-hour group, relative to the total student population, were: that proportionately more of them were older, white, and had had previous schooling in special classes. While more of the students in this group were men, there were relatively more women in the group than in the student population as a whole. Slightly more than half were single, but those who were married with children tended to have somewhat larger families than did other married students in the Project.

TABLE 100

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS OF 150-HOUR STUDENTS TO SEVEN TO 25-HOUR ATTENDERS AND TOTAL STUDENT POPULATION

IN PERCENT

Characteristics	150-Hour Students	7-25 Hour Attenders	Total Student Sample
	(N=72)	(N=167)	(N=650)
Race			
White	76	60	65
Negro	24	40	35
	(N=79)	(N=206)	(N=797)
Sex			
Men	62	69	72
Women	38	31	28
	(N=75)	(N=205)	(N=784)
Age			
16-21	17	25	26
22-27	23	27	26
28-38	25	28	25
39-84	35	20	23
	(N=75)	(N=203)	(N=782)
Marital Status			
Single	52	41	43
Are or were married	47	59	57
	(N=79)	(N=203)	(N=781)
Number of Children			
No children	57	51	50
1-2	11	24	24
3-4	22	15	16
5 or more	10	10	10

(Table 100 continued)

TABLE 100 (CONTINUED)

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS OF 150-HOUR STUDENTS TO SEVEN TO 25-HOUR ATTENDERS AND TOTAL STUDENT POPULATION

IN PERCENT

Characteristics	150-Hour Students	7-25 Hour Attenders	Total Student Sample
	(N=71)	(N=196)	(N=740)
Schooling (Highest Level)			
Third grade or less	11	14	14
Fourth-sixth	14	16	17
Seventh-ninth	14	27	20
Tenth grade or more	8	10	12
Special Class	53	33	37
	(N=65)	(N=163)	(N=630)
Location of Early School			
Northeast	88	72	76
South	12	28	24
	(N=79)	(N=206)	(N=797)
Method			
MCPS	79	66	69
RHG	21	34	31
	(N=74)	(N=188)	(N=717)
Employment			
Employed	57	58	61
Unemployed	24	29	26
Housewife	19	13	13
	(N=74)	(N=188)	(N=717)
Skill			
Skilled	32	36	37
Unskilled	49	51	50
Housewife	19	13	13
	(N=63)	(N=184)	(N=695)
Source of Referral			
Organization	41	41	39
Radio/TV	24	24	26
Friends/Relatives	35	35	35

II. COMPARISON OF HIGH AND LOW READING IMPROVEMENT GROUPS OF 150-HOUR STUDENTS

A. Sampling Procedures

The previous section of this chapter focused on defining characteristics of the entire 150-hour group, distinguishing it from the student group who had attended for seven to 25 hours and from the total student population in this report. This section deals with an important distinction within the 150-hour group alone--the differences between students who, according to the reading tests, improved most, and those who improved least. This question was rooted in the Project's search for information concerning factors which influence the teaching and learning of reading skills by adults.

Of the total group of 79 students who had attained at least 150 hours of instruction, complete initial test data and retest data at 150 hours were available for 36. This group composed the sample for the studies reported below.

B. Criterion for Distinguishing High and Low Reading Improvement

After careful consideration, the basis established for ranking 150-hour students who showed high, compared to low, reading improvement in the Project was improvement on the Gates Oral Reading test. Rationale for this decision is presented in Appendix H.

C. Comparisons of Demographic Characteristics

Improvement scores on the Gates, from initial to 150-hour testings, were divided at the median, forming two groups. The distribution of students in major demographic categories, according to these two groups, is presented in Table 101.

Because the number of students in each group was small, only differences were considered which involved 20% or more of one of the groups. With these criteria, the following results were obtained.

Students who improved more did not differ in most of the demographic characteristics from those who improved less. The variables which did not show notable differences were: race, sex, location of early schooling, method of instruction (MCPS or RHG), employment, and occupational skill.

The groups did differ, however, in the following ways:

- More of the students in the youngest age quartile (16-21 years) were in the group with below-the-median reading improvement.
- More of the single students were in the group with less improvement, while only students who were widowed, divorced or separated were in the above-the-median group.
- Two-thirds of those students in the group with below-the-median improvement had been in special classes previously. However, about one-third of the group with above-the-median improvement had also been special class students.
- More of the 150-hour students who had been referred by friends and relatives, or organizations, were in the group with improvement below the median; while of those with above the median improvement, almost two-thirds had responded to radio and TV recruitment efforts.

Another comparative analysis of demographic characteristics was made with the highest eleven and the lowest ranking eleven students of the above group of 36. This analysis also bore out the above findings.

TABLE 101

DEMOGRAPHIC COMPARISON OF 150-HOUR STUDENT GROUPS BY GATES IMPROVEMENT SCORES

IN PERCENT

	Below Median	Above Median
	(N=18)	(N=17)
Race		
White	83	71
Negro	17	29
	(N=19)	(N=17)
Sex		
Man	68	53
Woman	32	47

(Table 101 continued

TABLE 101 (CONTINUED)

DEMOGRAPHIC COMPARISON OF 150-HOUR STUDENT GROUPS BY GATES IMPROVEMENT SCORES

IN PERCENT

	Below Median	Above Median
	(N=19)	(N=17)
Age		
16-21	26	6
22-27	11	24
28-38	26	29
39-86	37	41
	(N=19)	(N=17)
Marital Status		
Single	47	29
Married	53	53
Widowed		6
Divorced/Separated		12
	(N=18)	(N=17)
Number of Children		
No children	56	34
1-2	22	24
3-4	22	41
	(N =18)	(N=17)
Schooling (Highest Level)		
Third grade or less	11	22
Fourth-sixth		23
Seventh-ninth	22	12
Tenth grade or more		18
Special Class	67	35
	(N=14)	(N=16)
Location of Early School		
Northeast	86	87
South	14	13
	(N=19)	(N=17)
Method		
MCPS	74	65
RHG	26	35

(Table 101 continued)

TABLE 101 (CONTINUED)

DEMOGRAPHIC COMPARISON OF 150-HOUR STUDENT GROUPS BY GATES IMPROVEMENT SCORES

IN PERCENT

	Below Median	Above Median
	(N=18)	(N=16)
Employment		
Employed	61	63
Unemployed	28	25
Housewife	11	12
	(N=18)	(N=16)
Skill		
Skilled	33	44
Unskilled	56	44
Housewife	11	12
	(N=17)	(N=11)
Source of Referral		
Organization	35	18
Radio/TV	24	64
Friends/Relatives	41	18

D. Comparison of Median Initial Grade Level for 150-Hour Students Making High and Low Reading Improvement

Further comparisons were made retaining the division of these same two groupings of 150-hour students: 1) those with above the median improvement, and 2) those with below the median improvement as measured by the Gates Oral Reading test. In Table 102, median grade levels of each of the two groups, as measured on the initial battery of reading tests, are compared with median grade levels of the combined 150-hour sample of 36 students on initial tests.

Findings from this comparison disclose that: the group of students with above-median improvement tended to have had slightly higher initial grade level scores on two of the three reading tests, than either the total 150-hour sample or the group of students with below-median improvement. In no case, however, was the difference statistically significant as indicated by chi-square analysis.

TABLE 102

COMPARISON OF MEDIAN INITIAL GRADE LEVELS FOR 150-HOUR STUDENT GROUPS WITH LOW AND HIGH IMPROVEMENT ON THE GATES

Test	Improvement Low Group	Improvement High Group	Combined 150-Hour Student Group
	(N=19)	(N=17)	(N=36)
Gates	2.3	2.7	2.5
SAT Word Meaning	2.1	2.6	2.5
SAT Paragraph Meaning	1.9	1.8	1.9

E. Comparison of Performances on Associated Tests by 150-Hour Student Groups of High or Low Reading Improvement

Still another comparison of the same two groups was made of medians of their group performance on the associated tests. Almost all of the 150-hour students under consideration here received the Lorge-Thorndike test upon entering the program. Smaller subsamples of the group received other associated tests, including the WAIS Vocabulary, Berea Gestalt, Bender Gestalt and Draw-a-Person tests. The relative performance on these tests by the 150-hour students whose reading improvement was above or below the median as measured by the Gates Oral Reading test, is shown in Table 103. Since the numbers in some of the subsamples are very small, the actual numbers of students, rather than percentages of the group, are entered in the table classifications. The results are summarized as follows:

- No difference in IQ, as measured by the Lorge-Thorndike test, was noted between students with above-median improvement and those with below-median improvement.

- There was a tendency for those students with below-median reading improvement on the Gates to have below-median WAIS IQ scores as well; and those students whose reading improvement was above-median on the Gates tended to have also above-median IQ's as defined by the WAIS Vocabulary (exact probability = 0.13).

CHAPTER II

DEMOGRAPHIC DESCRIPTION OF THE STUDENTS

2

CHAPTER II

DEMOGRAPHIC DESCRIPTION OF THE STUDENTS

One of the principal objectives of the Project for Adult Literacy has been to collect and analyze varied data about the illiterate student in the program, and to make the information available for others undertaking similar programs for adults in locations where poverty and illiteracy coexist. The focii of this chapter are studies of what the student is like as he enters the program and what he brings with him in the way of past experience and abilities pertinent to literacy studies.

Here and in Appendices A, B, and C, the adult students of the program are statistically described through tables and interpretive statements. The bases for these descriptions are data which have been systematically collected and processed as part of the central "action-research" effort of the Project.

These data permit many more analyses than are included here. For this program, for instance, the data have served to document the broadly heterogeneous group of adults who have recognized their need for training and have volunteered to study in community-based training centers operating only in the evenings. In similar urban locations, these data could aid developing projects to anticipate characteristics of the students they are most likely to attract under certain conditions, and to plan for them accordingly.

I. SOURCE OF INFORMATION

The information in this chapter has been compiled from answers to a basic set of questions regarding 797 students who registered in the program between April 1, 1965 and March 1, 1968.* Registration forms, filled out by the Field Tester-counselor, Supervisor, or teacher, usually on the students' first night in the center, were the major source of this data. Improvements and additions to data instruments late in the collection period account for the smaller number of responses reported in some studies, such as that of the language background of the student and his family.

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*Not included in these tabulations are data from the Project's only center limited to Spanish-speaking students.

II. TABULATION OF DESCRIPTIVE CHARACTERISTICS

A. Summary of Demographic Characteristics

Demographic characteristics are summarized in this chapter in a series of numbered statements, each followed by the table containing data from which the statement was drawn.

1. The ratio of whites to Negroes in the Project during the above period was slightly less than two to one.*

TABLE 1

STUDENT DISTRIBUTION BY RACE

	Number of Students	Percent
White	423	53
Negro	227	28
Other	27	3
Unknown*	120	16
Total	797	100

2. The ratio of men to women was about five to two.

TABLE 2

STUDENT DISTRIBUTION BY SEX

	Number of Students	Percent
Men	572	72
Women	225	28
Total	797	100

---

*The relatively large number of students in the "Unknown" category resulted because registration forms did not include a question on race and the information was supplied later by Supervisors and other field personnel in the centers.

3. One-half of the students were under 27 years of age.

4. One-quarter were between the ages of 16 and 21; another quarter were between 22 and 27; the third quarter were between 28 and 38; and the last quarter were between 39 and 86 years of age.

TABLE 3

STUDENT DISTRIBUTION BY AGE

	Number of Students	Percent
(Median age = 27 years)		
16 - 21	200	25
22 - 27	207	26
28 - 38	197	25
39 - 86	181	23
Unknown	12	1
Total	797	100

5. Slightly more than one-half of the students were, or had been, married; and slightly less than half were single. Nine percent were widowed, divorced or separated.

TABLE 4

STUDENT DISTRIBUTION BY MARITAL STATUS

	Number of Students	Percent
Single	341	43
Married	372	46
Widowed	16	2
Divorced or Separated	53	7
Unknown	15	2
Total	797	100

6. Almost half of the students were parents with at least one child.

7. More than one-quarter of the students reported having from three to more than seven children. Of those students with children, twenty percent had five or more.

TABLE 5

STUDENT DISTRIBUTION BY NUMBER OF CHILDREN

	Number of Students	Percent
No children	389	49
1 - 2	185	23
3 - 4	128	16
5 - 6	48	6
7 or more	31	4
Unknown	16	2
Total	797	100

8. Slightly less than one-quarter of the adult students reported no employment at all at the time of registration. The rest were students in other programs as well, housewives, work trainees, or were employed in skilled or unskilled jobs.*

9. Slightly less than one-half of the students were clearly unskilled workers, and slightly less than one-tenth were skilled. Data do not indicate conclusively the extent to which those who were students in other programs also, or housewives and work trainees, would be classified appropriately as unskilled labor.

TABLE 6

STUDENT DISTRIBUTION BY EMPLOYMENT

	Number of Students	Percent
Employed/Skilled	208	26
Employed/Unskilled	229	29
Unemployed/Skilled	57	7
Unemployed/Unskilled	131	16
Housewife	92	12
Student	40	5
Work Training	25	3
Unknown	15	2
Total	797	100

---

*Determination of skilled or unskilled employment was based on definitions provided in: United States Employment Service, Division of Occupational Analysis, Dictionary of Occupational Titles, Volume I, Definitions of Titles, p. xxii, 2nd ed., Government Printing Office, Washington, D.C., 1949. Unskilled work is defined as that in which "actual experience in duties performed is of minor importance as duties can be learned in a few days at most." Skilled work is defined as "that which does not fit into the above unskilled category."

10. Only three percent of the students reported having had no schooling at all.

11. Three-fifths of the students received their early schooling in the Northeastern states, one-fifth in the Southern states.

TABLE 7

STUDENT DISTRIBUTION BY SCHOOL HISTORY: LOCATION OF SCHOOL

	Number of Students	Percent
Northeastern states	476	60
Southern states	154	19
Other locations	71	9
No schooling	27	3
Unknown	69	9
Total	797	100

12. A large proportion of students received some part of their previous schooling in special classes or schools for slow learners.* Thirty percent of the students had completed the seventh grade or higher, while almost thirty percent had completed the sixth grade or less.

TABLE 8

STUDENT DISTRIBUTION BY SCHOOL HISTORY: HIGHEST GRADE ATTAINED

	Number of Students	Percent
Special class or school	276	34
Third grade or less	101	13
Fourth - Sixth	125	16
Seventh - Ninth	150	19
Tenth grade or more	88	11
Unknown	57	7
Total	797	100

---

*Students classified as having attended special classes or schools for slow learners were not further subdivided into the highest grade which they had attained.

13. About one-third of the students who registered had learned about the program as a result of the Project's recruitment campaigns, some in cooperation with social, anti-poverty, business and other organizations. Almost one-quarter of the students responded to radio and television announcements. About one-third were referred by their friends or relatives, many of whom were also students.

TABLE 9

STUDENT DISTRIBUTION BY SOURCE OF REFERRAL*

	Number of Students	Percent
Organization	270	34
Newspaper	19	2
Radio/Television	182	23
Posters/Fliers	17	2
Friends/Relatives	243	31
Multiple (one personal and one impersonal source)	10	1
Unknown	56	7
Total	797	100

---

*A small survey made of records of telephone inquiries to the central office in late 1966 revealed that most of those calling at that time learned of the Project from spot television announcements. Of particular interest was the fact that almost half of those calling had stated that they were calling to assist some other person whom they knew needed literacy training rather than for themselves.

B. Literacy Background of the Students and Families

Between January and July 1967, 176 registering students responded to new registration questions regarding the literacy background of their families. These data are summarized in the statements and tables below.*

14. Almost four-fifths of the students in this study reported that both parents could read English. About one-fifth of the students reported one or both parents to be illiterate in English.

TABLE 10

PARENTAL LITERACY: ENGLISH

Question: When you were a child could your parents read English?

	Number of Students	Percent
Yes	138	79
No	27	15
Yes (one parent)	11	6
Total	176	100

15. About one-third of the students reported that their parents could read another language in addition to English.

TABLE 11

PARENTAL LITERACY: FOREIGN

Question: When you were a child could your parents read any other language besides English?

	Number of Students	Percent
Yes	58	34
No	108	63
Yes (one parent)	6	3
Total	172	100

---

*Variations in totals are due to students' uncertainty regarding answers.

16. About one-third of the students reported that both parents spoke another language at home.

TABLE 12

PARENTS' FOREIGN LANGUAGE FLUENCY

Question: Did your parents speak any language other than English at home?

	Number of Students	Percent
Yes	60	35
No	104	61
Yes (one parent)	7	4
Total	171	100

17. However, slightly less than one-fifth of the students reported that they themselves spoke another language at home as children.

TABLE 13

STUDENTS' FOREIGN LANGUAGE FLUENCY IN CHILDHOOD

Question: When you were a child, did you speak any language other than English at home?

	Number of Students	Percent
Yes	31	18
No	139	82
Total	170	100

18. More than half of the students reported having been encouraged to read at home as children.

TABLE 14

CHILDHOOD READING ENCOURAGEMENT

Question: Were you encouraged to read at home?

	Number of Students	Percent
Yes	93	56
No	74	44
Total	167	100

19. About one-third of the students indicated that close relatives had reading difficulties. Almost nine percent reported that two or more close relatives had reading problems.

20. Almost two-thirds of the students reported that no close relatives had reading difficulties.

TABLE 15

ILLITERACY AND READING PROBLEMS IN STUDENTS' FAMILIES

Question: Do any of your relatives not know how to read or have problems with reading?

	Number of Students	Percent
Parents with reading problems	19	11
Siblings	24	14
Children	3	2
Both parents and siblings	12	7
Both children and spouse	1	1
Parents, siblings, children, and spouse	1	1
Total	60	36
No relatives with reading problems	105	64
Total	165	100

A question regarding the student's first awareness of his reading difficulty was introduced late in the data collection period. Responses obtained from twenty-five students are summarized below in Table 16.

21. Sixty percent of the students who were questioned recalled having had problems with reading as early as childhood.

TABLE 16

STUDENTS' AWARENESS OF READING DIFFICULTY

Question: When was it first noticed that you had trouble reading and writing?

	Number of Students	Percent
Childhood	15	60
High School	3	12
Adulthood	5	20
Other (foreign birth)	2	8
Total	25	100

III. CROSS TABULATIONS OF SELECTED DEMOGRAPHIC CHARACTERISTICS

The information contained in the above tables was further analyzed to explore relationships among various demographic characteristics of the students. These relationships are presented in Tables 17 through 29 and Tables 35 through 42. A similar analysis was completed for the information on the students' language background. These relationships are presented in Tables 30 through 34.

In Tables 17 through 42, the statistical significance of each relationship was computed by chi square analysis. The level of significance is indicated on each table.*

In the cross tabulation tables there are fewer categories for each demographic characteristic than appear in Tables 1 through 9, the single tabulation tables. The category "Unknown" has been systematically dropped in all cross tabulation tables, along with categories which represent less than ten percent of the population under consideration in the student body. Reducing the number of categories permits interrelationships between the characteristics to become more apparent and is mandatory for certain of the statistical analyses presented.

For example, in Table 1 the variable "Race" was broken down into four categories: "White," "Negro," "Other," and "Unknown." In Tables 17 through 29, only "White" and "Negro" are included under the variable "Race." The "Unknown" and "Other" categories have been omitted.

Two entries are presented for each characteristic in the cross tabulations. One of these reports the actual number of students, or "N", in each cross-category cell. The other entry reports the percentage of the column category which the cell "N" represents. The first cross tabulation, that between "Race" and "Sex," can be utilized to illustrate how each of these tables is to be read. Table 17 indicates that the total number of students included in the analysis in this cross tabulation is 650, the 797 students reported in Table 1, less 147 who were categorized either as "Other" or "Unknown." Of these 650 students, 423 were white and 227 were Negro. The entry at the bottom left of the table indicates that the relationship found between sex and race among the students is statistically significant beyond the .001 level of confidence as determined by chi square analysis. That is, the probability is less than one in one thousand that the relationship between sex and race among the students is a matter of chance.*

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*Throughout this report, the confidence level accepted as indicating that a relationship is statistically significant is the .05 level of confidence or beyond. The computation of a chi square for any cross tabulation of data was considered invalid whenever a single expected frequency was less than one or whenever twenty percent or more of the expected frequencies were less than five. (Siegal, Sidney. Non-parametric Statistics for the Behavioral Sciences. McGraw-Hill Book Co., Inc. New York, 1956) Note that expected frequencies are not raw cell frequencies.

A. Relationship between Race and Other Demographic Characteristics of Students

22. Among the white students, there were more men than women in a ratio of about four to one.

23. Among the Negro students, on the other hand, the ratio of men to women was about three to two.

TABLE 17

RELATIONSHIP BETWEEN RACE AND SEX

Sex	White Students		Negro Students		Total
	Number	Percent	Number	Percent	
Men	339	80	131	58	470
Women	84	20	96	42	180
Total	423	100	227	100	650

x^2 : $p < .001$

---

*The demographic characteristics from Tables 1 through 29, descriptive of Negro and white students, were further subdivided with respect to sex so that certain demographic characteristics could be compared between white men and Negro men and between white women and Negro women. Only the relationships reported in this section were statistically significant.

24. The Negro students on the whole, comprised a slightly older group than did the white students. The median age of the Negroes was 32; the median age of the white students was 26.

TABLE 18

RELATIONSHIP BETWEEN RACE AND AGE

Age	White Students		Negro Students		Total
	Number	Percent	Number	Percent	
16-21	114	27	50	23	164
22-27	116	28	42	19	158
28-38	104	25	55	25	159
39-86	84	20	74	33	158
Total	418	100	221	100	639

x^2 : $p < .001$

25. The male student population included a significantly greater percentage (fifty-seven percent) of young white men, 16-27 years, as compared to the forty-one percent of young Negro men.

TABLE 19

RELATIONSHIP BETWEEN RACE AND AGE: MEN

Age	White Men		Negro Men		Total
	Number	Percent	Number	Percent	
16-21	97	29	28	22	125
22-27	95	28	25	19	120
28-38	84	25	34	27	118
39-86	60	18	41	32	101
Total	336	100	128	100	464

x^2 : $p < .01$

26. With few exceptions, the white students were educated in Northeastern schools; only three out of every ten Negro students, however, were educated in the Northeast.

TABLE 20

RELATIONSHIP BETWEEN RACE AND SCHOOL HISTORY: LOCATION OF SCHOOL

Location of School	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Northeastern states	342	97	55	30	397
Southern states	9	3	128	70	137
Totals	351	100	183	100	534

$x^2 : p < .001$

27. About one-half of the white students had attended special classes for slow learners, whereas only about one-seventh of the Negro students did so.

28. Almost one-quarter of the Negroes did not go beyond the third grade, compared to only one-twentieth of the white students who did not.

29. On the other hand, the same percentage (twelve percent) of Negro and of white students in the Project reported having previously attained tenth grade or more.

30. Excluding special class students, the median highest grade level attained, as reported by white students, lay between seventh and ninth grades; whereas the median highest grade level attained by Negro students lay between fourth and sixth grades.

TABLE 21

RELATIONSHIP BETWEEN RACE AND SCHOOL HISTORY: HIGHEST GRADE ATTAINED

Highest grade Attained	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Special class or school	203	52	30	14	233
Third or less	20	5	50	23	70
Fourth-Sixth	45	12	58	27	103
Seventh-Ninth	74	19	52	24	126
Tenth or more	48	12	27	12	75
Total	390	100	217	100	607

$x^2 : p < .001$

31. The white students were equally divided between those who were single and those who were married. However, among the Negro students there were more married than single. Proportionately, considerably more Negro than white students were widowed, divorced or separated.

TABLE 22

RELATIONSHIP BETWEEN RACE AND MARITAL STATUS

Marital Status	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Single	200	48	70	32	270
Married	202	48	107	49	309
Widowed, divorced, or separated	18	4	40	19	58
Total	420	100	217	100	637

$x^2 : p < .001$

32. The percentage of Negroes who had children was higher than that of the whites. In addition, the size of Negro families tended to be larger than that of white families.

TABLE 23

RELATIONSHIP BETWEEN RACE AND NUMBER OF CHILDREN

Number of Children	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
No children	228	54	88	41	316
1 - 2	100	24	53	25	153
3 - 4	64	15	40	18	104
5 - 7 or more	30	7	34	16	64
Total	422	100	215	100	637

$x^2 : p < .001$

33. The unemployment rate was somewhat higher in the Negro group than the white group; and there were more housewives in the Negro group than in the white group.

TABLE 24

RELATIONSHIP BETWEEN RACE AND EMPLOYMENT STATUS

Employment Status	White Students		Negro Students		Total
	Number	Percent	Number	Percent	
Employed	267	70	100	50	367
Unemployed	86	22	61	30	147
Housewife	32	8	41	20	73
Total	385	100	202	100	587

x^2: $p < .001$

34. The significant difference in employment between races was accounted for by the unemployment of male Negroes. Thirty-four percent of the Negro men were unemployed, as compared to twenty-one percent of the white men.

TABLE 25

RELATIONSHIP BETWEEN RACE AND EMPLOYMENT STATUS: MEN

Employment Status	White Men		Negro Men		Total
	Number	Percent	Number	Percent	
Employed	241	79	77	66	318
Unemployed	63	21	40	34	103
Total	304	100	117	100	421

x^2: $p < .01$

35. There was no statistically significant difference in employment status between white and Negro women.

36. Fewer Negro students than white students were employed as skilled workers.

TABLE 26

RELATIONSHIP BETWEEN RACE AND SKILL

Skill	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Skilled	159	41	60	30	219
Unskilled	194	51	101	50	295
Housewife	32	8	41	20	73
Total	385	100	202	100	587

x^2: $p < .001$

37. Approximately the same percentage of white and Negro students were referred by friends and relatives. Most of the other Negro students were referred by organizations, and relatively few heard of the Project through radio and TV announcements. The white students, on the other hand, were almost equally divided between those referred by organizations and those who heard about the Project on the radio and TV.

TABLE 27

RELATIONSHIP BETWEEN RACE AND SOURCE OF REFERRAL

Source of Referral	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Organization	132	35	89	47	221
Radio/TV	124	33	32	17	156
Friends or relatives	118	32	67	36	185
Total	374	100	188	100	562

x^2: $p < .001$

38. White men were referred almost equally by all three sources, with radio and TV ranking first, whereas the Negro men were referred least often by radio and TV, and most often by organizations.

TABLE 28

RELATIONSHIP BETWEEN RACE AND SOURCE OF REFERRAL: MEN

Source of Referral	White Men Number	White Men Percent	Negro Men Number	Negro Men Percent	Total
Organization	102	34	53	49	155
Radio/TV	104	35	24	22	128
Friends/ Relatives	95	31	31	29	126
Total	301	100	108	100	409

x^2: not significant

39. White women were referred most often by organizations; and they were referred almost equally by friends and relatives, and radio or TV. Negro women were referred most often by organizations, and friends and relatives, but significantly less by radio and TV.

TABLE 29

RELATIONSHIP BETWEEN RACE AND SOURCE OF REFERRAL: WOMEN

Source of Referral	White Women Number	White Women Percent	Negro Women Number	Negro Women Percent	Total
Organization	30	41	36	45	66
Radio/TV	20	27	8	10	28
Friends/ Relatives	23	32	36	45	59
Total	73	100	80	100	153

x^2: $p < .02$

40. No statistically significant differences were found between the Negro and white students with respect to test performance on any one test measuring initial reading

ability, intelligence or visual-motor functioning. On each test, however, the Negro students performed slightly less well than the white students.*

B. Relationship Between Race and Literacy Background

41. There was no significant difference between the Negro and white students regarding reported parental literacy in English.

TABLE 30

RELATIONSHIP BETWEEN RACE AND PARENTAL LITERACY: ENGLISH

Parental Literacy: English	White Students		Negro Students		Total
	Number	Percent	Number	Percent	
Yes	99	83	32	94	131
No	21	17	2	6	23
Total	120	100	34	100	154

x^2: not significant

42. More white than Negro students reported that their parents were literate in and spoke a foreign language.

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*See Appendix A, Table 1. Appendix A summarizes the cross tabulations between demographic characteristics and the tests used to measure initial reading ability, intelligence and visual-motor functioning. These tests are discussed in Chapters IV, V, and VI.

TABLE 31

RELATIONSHIP BETWEEN RACE AND PARENTAL LITERACY: FOREIGN

Parental Literacy: Foreign	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Yes	47	40	6	16	53
No	71	60	32	84	103
Total	118	100	38	100	156

x^2: $p < .01$

TABLE 32

RELATIONSHIP BETWEEN RACE AND PARENTS' FOREIGN LANGUAGE FLUENCY

Parents' Foreign Language Fluency	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Yes	51	43	5	14	56
No	67	57	31	86	98
Total	118	100	36	100	154

x^2: $p < .01$

43. More white students reported that they themselves spoke a foreign language during childhood.

TABLE 33

RELATIONSHIP BETWEEN RACE AND STUDENTS' FOREIGN LANGUAGE FLUENCY IN CHILDHOOD

Students' Foreign Language Fluency	White Students Number	White Students Percent	Negro Students Number	Negro Students Percent	Total
Yes	28	23	2	5	30
No	94	77	36	95	130
Total	122	100	38	100	160

x^2: $p < .02$

C. Relationship Between Sex and Other Demographic Characteristics of Students

44. Women students on the whole, comprised a slightly older group than did the men students. Fifty-five percent of the women were above 27 years of age as compared to forty-five percent of the male students; and thirty percent of the women were above 38 years of age as compared to twenty percent of the men.

TABLE 34

RELATIONSHIP BETWEEN SEX AND AGE

Age	Men		Women		Total
	Number	Percent	Number	Percent	
16 - 21	155	27	45	21	200
22 - 27	156	28	52	24	208
28 - 38	140	25	56	25	196
39 or above	115	20	66	30	181
Total	566	100	219	100	785

x^2: $p < .02$

45. A greater proportion of the men had been trained in Northeastern schools.

TABLE 35

RELATIONSHIP BETWEEN SEX AND LOCATION OF SCHOOL

Location of School	Men		Women		Total
	Number	Percent	Number	Percent	
Northeastern states	367	80	109	64	476
Southern states	92	20	62	36	154
Total	459	100	171	100	630

x^2: $p < .001$

46. A substantially greater percentage of the men than of the women had attended special classes or schools.

47. A substantially greater percentage of the women than of the men had attained sixth grade or less; whereas about an equal percentage of men and women had attained seventh grade or more.

TABLE 36

RELATIONSHIP BETWEEN SEX AND SCHOOL HISTORY: HIGHEST GRADE ATTAINED

Highest Grade Attained	Men		Women		Total
	Number	Percent	Number	Percent	
Special class or school	220	41	56	27	276
Third or less	68	13	33	16	101
Fourth-Sixth	76	14	49	24	125
Seventh-Ninth	111	21	39	19	150
Tenth or more	60	11	28	14	88
Total	535	100	205	100	740

x^2: $p < .001$

48. A greater percentage of the women were widowed, divorced or separated.

TABLE 37

RELATIONSHIP BETWEEN SEX AND MARITAL STATUS

Marital Status	Men		Women		Total
	Number	Percent	Number	Percent	
Single	257	45	84	39	341
Married	282	50	90	42	372
Widowed, divorced, or separated	29	5	40	19	69
Total	568	100	214	100	782

x^2: $p < .001$

49. More women than men students had children; more women than men also had the larger families.

TABLE 38

RELATIONSHIP BETWEEN SEX AND NUMBER OF CHILDREN

Number of Children	Men		Women		Total
	Number	Percent	Number	Percent	
No children	292	52	97	44	389
1 - 2	131	23	54	24	185
3 - 4	94	17	34	16	128
5 - 7	45	8	34	16	79
Total	562	100	219	100	781

x^2: $p < .02$

50. With the category "Housewife" not included, there was still a greater proportion of unemployed women than of unemployed men among the students.

TABLE 39

RELATIONSHIP BETWEEN SEX AND EMPLOYMENT

Employment	Men		Women		Total
	Number	Percent	Number	Percent	
Employed	371	73	66	56	437
Unemployed	137	27	51	44	188
Total	508	100	117	100	625

x^2: $p < .001$

51. With the category "Housewife" not included, there was also a greater proportion of unskilled women than of unskilled men among the students.

TABLE 40

RELATIONSHIP BETWEEN SEX AND SKILL

Skill	Men		Women		Total
	Number	Percent	Number	Percent	
Skilled	243	48	22	19	265
Unskilled	265	52	95	81	360
Total	508	100	117	100	625

x^2: $p < .001$

52. Slightly more women than men were referred to the program by friends and relatives. More men reported hearing about the program from radio and TV than did the women.

TABLE 41

RELATIONSHIP BETWEEN SEX AND SOURCE OF REFERRAL

Source of Referral	Men		Women		Total
	Number	Percent	Number	Percent	
Organization	192	38	78	41	270
Radio/TV	147	29	35	18	182
Friends/ Relatives	165	33	78	41	243
Total	504	100	191	100	695

x^2: $p < .02$

53. Regarding test performances:

- There was a slight but not significant tendency for women to score a little higher than men on the initial reading tests.
- Men had significantly higher IQ's than women, as measured by the Lorge-Thorndike Test.

- Men did significantly better on the ABLE Vocabulary subtest than did the women.

- Although the differences were not significant, men tended to perform slightly better than the women on two tests of visual-motor functioning.

- Analysis of the DAP drawings indicated greater psychological maturity on the part of the men than of the women.

54. No significant differences were found between men and women with respect to their parents'literacy or the language spoken in their homes during their childhood.

All the differences between men and women students, with respect to the demographic characteristics just discussed, were further analyzed with respect to race; thus men and women Negro students could be compared with men and women white students in these same respects.

55. Significant differences between sexes of the same race were found for marital status, source of referral, employment status and level of skilled employment. These differences corroborated the differences already reported between the sexes on these same dimensions.

56. On all other dimensions, differences between men and women of the same race were not statistically significant.

D. Relationship Between Geographical Location of Early Schooling and School History

The relationship between the location of a student's early schooling and the grade level attained in school is presented in Table 42. The figures indicate a marked relationship between these two variables.

57. More than half of the students who were educated in the Northeast received their early training in special classes for slow learners; whereas only five percent of the students educated in Southern schools were registered in such classes.

58. Just four percent of the students educated in the Northeast attained only third grade or less; whereas twenty-five percent of the students educated in the South attained only third grade or less as their highest educational level.

59. Fifty-five percent of the students from the South had only a sixth grade education or less; whereas only fifteen percent of the students from the Northeast had a sixth grade education or less.

60. Only thirty percent of the student group educated in the Northeast reported having attained from fourth to ninth grades; whereas sixty percent of the students from the South reported their highest educational attainment in these same categories.

TABLE 42

RELATIONSHIP BETWEEN LOCATION OF SCHOOL AND HIGHEST GRADE ATTAINED

Highest Grade Attained	Northeastern States		Southern States		Total
	Number	Percent	Number	Percent	
Special class or school	236	52	8	5	244
Third or less	17	4	37	25	54
Fourth-Sixth	50	11	45	30	95
Seventh-Ninth	85	19	46	30	131
Tenth or more	61	14	15	10	76
Total	449	100	151	100	600

x^2: $p < .001$

In order to understand the above differences, it should be recalled first that most of the Project's students coming from Southern schools were Negroes (93%), and most of those educated in the Northeast were white (86%). In view of the likelihood that there were fewer special educational facilities available for slow students in the South than there were for Northern white students, the comparatively large percentage of Northeastern students in special classes cannot be construed as reflecting a difference in intellectual ability between the white and Negro students. On the contrary, the Project's data with respect to intelligence and reading ability indicate that students of both races entered the Project at approximately the same level of proficiency.*

It is likely also that slow students in the Southern states either continued longer in regular classes(60% with highest grade level: fourth to ninth) or dropped out before the end of third grade (25%). In comparison, much lower percentages of Northeastern schooled students appeared in these categories, with the greater proportion apparently having been transferred to special classes.

From the data presented in this chapter, it is possible to draw portraits of the "typical" student in the Project, and to make comparisons of the "typical" Negro and white students. However, one of the most striking findings has been the wide heterogeneity of the student population which has responded to the kind of opportunity for learning offered through the Project. To describe so varied a population in one to three limited composites is likely to be misleading.

Therefore, the data have been presented singly and in cross tabulations for use by others also: 1) in anticipating the needs of potential adult illiterate student populations, and 2) in planning for appropriate training for them. In the chapters which follow and in the appendices, these data are related to other data in analyses useful for better understanding of the nature of the adult students' extended reading disabilities, of their experience in this Project, their reactions to the program, and their progress.

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*See Appendix A.

The striking interrelationship between race, location of early schooling, and school history accounts for the similarity between entries presented in the tables above in the section on "Relationship Between Race and Other Demographic Characteristics," and in those entries presented in two Appendices: Appendix B, "Cross Tabulations Between Location of Early Schooling and Other Demographic Characteristics"; Appendix C, "Cross Tabulations Between School History and Other Demographic Characteristics."

CHAPTER III

STUDENT ATTENDANCE

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STUDENT ATTENDANCE

In the previous chapter, statistical analyses were presented describing the students as they came to the Project. Here studies are reported of a vital area of students' participation once they were in the Project -- the area of attendance.*

In this educational program for adults, where enrollment and continued attendance have been voluntary and where no immediate extrinsic rewards have come directly from the Project, the problem of attendance has assumed greater than usual importance. Not only have the students' possibilities for successful learning been controlled in part by the regularity of their attendance, but the success of the research and demonstration aspects of the Project, as well, have been affected.

Accordingly, studies of attendance have been undertaken for a number of reasons; among them:

- To delineate the rates and patterns of attendance to be expected from this kind of student population.
- To identify critical periods in which students tended to leave training, in order to concentrate attention on the problem periods and plan preventive action.
- To explore the possibility of viewing attendance as a measure of students' motivation to learn.
- To analyze the impact of attendance behavior on the total program so as to define related problem areas and plan operationally, administratively, and educationally, for maximum use of Project resources for students.

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*In this chapter, descriptive statements regarding the students continue the numbering begun in Chapter II.

- To permit others to share applicable experience for the planning of their own literacy programs.

Those analyses presented in this chapter include:

- A general distribution of students by hours of instruction.
- A further distribution of students who remained in the program for the shortest periods of time, 50 hours or less.
- An analysis of the varied lengths of time required by students to achieve 150 hours of training.
- An examination of relationships between demographic groupings of students and hours of attendance.
- An examination of relationships between students' initial test performance and hours of instruction.
- An examination of the relationships between patterns of attendance and demographic groupings of students.

Other efforts related to attendance included several approaches to the study of the causes of student drop-out and its prevention. Among these were the Field-tester counselor program, a telephone follow-up study of students no longer attending, and a study of the effects of objective testing on attendance and drop-out.

BACKGROUND

A brief review of certain elements of the Project and certain facts about the students is pertinent to interpretation of the findings in the studies which are reported below.

- The program originated when even the existence of adult illiterates in the Boston area was questioned generally; and when adult illiteracy carried such stigmatic overtones for individuals that it was difficult for them to seek help.

- The Project was traditionally a voluntary venture for adults who first faced the handicapping effects of their lack of reading skills, and then volunteered for free training.

- No leverage was available to the Project with which to enforce attendance.

- Almost all of the students had responsibilities which would have precluded their attending daytime classes or even more than two evening sessions per week.

- Many of the students had little, or distant, or unfavorable experience with previous schooling.

- Many of the students were unaccustomed to making and maintaining personal commitments of this nature.

- Most of them were afraid.

- To encourage students to register, they were admitted as soon as possible after their decision to come.

- Enrollment was permitted throughout the year.

- Training centers were open year round with only major holidays observed.

- To help in easing students into an educational experience as an acceptable part of their lives, no set semesters or specific points of graduation were delineated to them; and no attendance commitments were extracted from them in advance.

- At the prevailing rate of three to four hours of training per week, almost a full year of regular attendance was necessary to amass the 150 hours of training which was a Project goal for students.

- For many students the literacy centers were not only centers for learning, but social centers as well.

- Related to students' attendance, and vice versa, was the regularity of attendance of the volunteer tutors who worked individually with them. Both groups reported feelings of rejection when their working partners failed to arrive; and some of each group discontinued their own participation following the absences.

I. SOURCES OF INFORMATION

Analyses of attendance records and of communications from teaching personnel have provided the findings below. The basic sample studied, as in the previous chapter, is the group of 797 students who registered in the Project between April 1, 1965 and March 1, 1968. However, sample sizes have varied as special ancillary studies were undertaken to provide data bearing on specific problems.

For data analysis in any particular study, those students who did not attend at least one session during the one month period preceding the analysis were considered to have left the program. The Project's experience, however, was that some students returned after two or three months of absence, and in several recorded instances after absences of more than a full year.

II. ATTENDANCE DISTRIBUTION OF STUDENTS

A. By Hours of Instruction

Table 43 presents a distribution of the number of students who attended the program for various lengths of time. Categories of hours of instruction in this table coincide for the most part with testing and retesting points in the original schedule for standardized measurement of students' reading progress. The table indicates that:

61. Thirty-two percent of the students attained more than 50 hours of instruction, with ten percent (79 students) attaining 150 hours or more.

62. Sixty-eight percent of the students attained 50 hours or less.

It should be noted that approximately 50 hours of instruction required a minimum range of thirteen to seventeen weeks of regular attendance -- or three to four months' time, depending on the schedule of the specific center.

TABLE 43

DISTRIBUTION OF STUDENTS BY HOURS OF INSTRUCTION

Hours of Instruction	Number of Students	Percent
0 - 50	544	68
51 - 100	123	16
101 - 150	51	6
151 - 398	79	10
Total	797	100

B. By 50 Hours of Instruction or Less

Table 44 presents a breakdown of students who participated for 50 hours or less.

63. Of the students participating for 50 hours or less, not quite half discontinued participation within ten hours or less.

64. Of that group of early withdrawals, a little under half again attended for only one evening, or up to two hours.

Since orientation, testing, and registration usually consumed at least half of the first session, these latter students sampled little of the teaching procedures before discontinuing. Some of the students in the above two groups were reported as seeking speed reading, high school equivalency instruction, English as a second language, or specialized training in other academic or vocational areas, and so did not actually consider themselves candidates for the basic literacy training offered in the program.

65. Of the 797 students who comprise the basic student population of this report, more than fourteen percent had up to two hours only, in a center, with less than that time in reading instruction; and almost one-quarter of the 797 had six hours or less of instruction.

TABLE 44

DISTRIBUTION OF STUDENTS BY 50 HOURS OF INSTRUCTION OR LESS

Hours of Instruction	Number of Students		
0 - 2	115		
3 - 6	80		
7 - 10	57		
Total: 10 hours or less		252	
11 - 20		105	
21 - 30		78	
31 - 40		71	
41 - 50		38	
Total: 50 hours or less			544

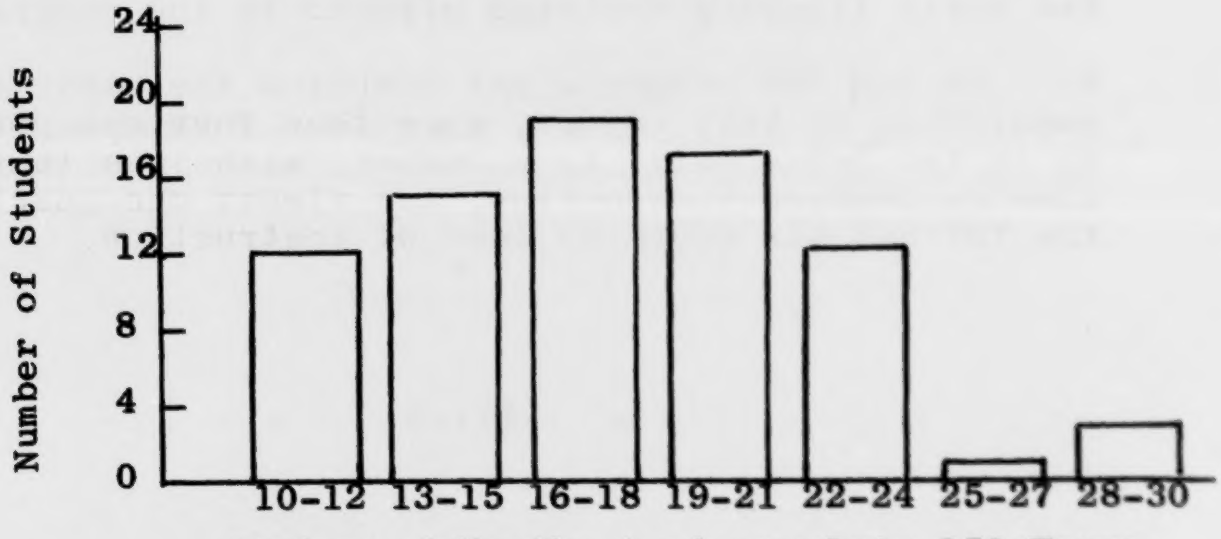
C. Span of Months for 150 Hours of Instruction

The number of months of attendance required by each of the 79 students who accumulated at least 150 hours of instruction is presented in three-month intervals in Figure 1.

66. The median span required by students to complete 150 hours of instruction was 17.5 months; the minimum span was almost one year; the maximum over two and a half years.

FIGURE 1

NUMBER OF MONTHS REQUIRED TO ACCUMULATE 150 HOURS OF INSTRUCTION



Median = 17.5 months N = 79 students

III. COMPARISON OF STUDENT DEMOGRAPHIC GROUPINGS BY HOURS OF INSTRUCTION

The purpose of the following analyses was to determine what relationship there might be between demographic characteristics and the length of students' attendance in the Project. Tables in this section show comparisons of the basic demographic categories in terms of hours of attendance. The intervals which appear in the tables are the quartile ranges of attendance for the total population sample of 797 registered students. Again, as in Chapter II, the categories "Other" and "Unknown" have been omitted in the demographic breakdowns. The number of students involved in the different comparisons therefore varies. For the sake of simplicity, however, the quartile attendance range for the total population is used throughout the tables.

The findings in Table 45 may be summarized as follows:

67. White students tended to participate in the program longer than Negro students; and a lower percentage of white than of Negro students discontinued training early. Of the 423 white students in the analysis, 34% attended more than 66 hours and only 16% discontinued after less than seven hours of instruction. Of the 227 Negro students 20% attended more than 66 hours, and 25% discontinued after less than 7 hours of instruction.*

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* The difference between white and Negro students in attendance was further tested by analyzing the records of the men and women separately, considering each group in terms of the top two attendance quartiles in comparison with the bottom two quartiles (median split); as well as in terms of the top attendance quartile compared with the bottom quartile. All four tests yielded significant chi square values, indicating longer attendance by white than by Negro students (median split: men, $p < .05$; women, $p < .02$; top vs. bottom quartile: men, $p < .02$; women, $p < .01$).

TABLE 45

RELATIONSHIP BETWEEN RACE AND ATTENDANCE

Race	Hours of Attendance 0-6	7-25	26-65	66-398	Total
White					
Number	68	101	111	143	423
Percent	16	24	26	34	100
Negro					
Number	57	66	59	45	227
Percent	25	29	26	20	100
Total Number	125	167	170	188	650

68. The sex of the student was not related to attendance.

TABLE 46

RELATIONSHIP BETWEEN SEX AND ATTENDANCE

Sex	Hours of Attendance 0-6	7-25	26-65	66-398	Total
Men					
Number	142	142	146	142	572
Percent	25	25	25	25	100
Women					
Number	53	64	49	59	225
Percent	24	28	22	26	100
Total Number	195	206	195	201	797

69. There was a tendency for younger students to leave the program earlier than for older students to do so. Of the 199 students in the 16 to 21 age bracket in this analysis, only 19% stayed in the program for more than 66 hours; whereas 31% left the program before seven hours, and a total of 57% left before completing 26 hours of instruction, or six to eight weeks of training.

70. Out of 181 students who were 39 years of age or older,29% stayed beyond 66 hours and only 22% dropped out in less than seven hours.

TABLE 47

RELATIONSHIP BETWEEN AGE AND ATTENDANCE

Age	Hours of Attendance 0-6	7-25	26-65	66-398	Total
16-21					
Number	61	51	49	38	199
Percent	31	26	24	19	100
22-27					
Number	53	55	54	46	208
Percent	26	26	26	22	100
28-38					
Number	39	58	41	59	197
Percent	20	29	21	30	100
39-86					
Number	40	41	48	52	181
Percent	22	23	26	29	100
Total Number	193	205	192	195	785

71. A greater percentage of students who were educated in the Northeastern states (29%) remained in the program beyond 66 hours than of the students trained in the Southern states (17%).

TABLE 48

RELATIONSHIP BETWEEN LOCATION OF SCHOOL AND ATTENDANCE

Location of School	Hours of Attendance 0-6	7-25	26-65	66-398	Total
Northeastern					
Number	112	117	108	139	476
Percent	23	25	23	29	100
Southern					
Number	37	46	44	27	154
Percent	24	30	29	17	100
Total Number	148	163	152	166	629

72. A relatively high percentage (31%) of students who had been in special classes as youngsters attended the Project beyond 66 hours.

In Chapter II and Appendices A, B, and C, it was observed that "Race," "Location of Schooling," and "Highest Grade Attained in School" were all related to each other. Here it is apparent that all three factors relate to attendance in the Project as well.

73. Of the students with more than a tenth grade education, a relatively high percentage (33%) left the Project early (0-6 hours of instruction) in comparison with students of other school history groups, with a range of from 21% to 26% leaving the Project in their first six hours. The fact that some of the students with more years of schooling mistook the program for one in speed reading or some other form of advanced instruction is partially responsible for this difference.

The relatively large number of students who had gone at least as far as high school previously, yet stayed on in the Project, is interesting to note, as is their apparent requirement for basic remedial training in reading in spite of the high grade level they had attained in school as youngsters. This percentage (17%) is in comparison with a range of 17% to 24% in the different student groups who had attended regular classes as youngsters, and who remained in the Project for 66 hours or more.

TABLE 49

RELATIONSHIP BETWEEN SCHOOL HISTORY AND ATTENDANCE

Highest Grade Attained	Hours of Attendance 0-6	7-25	26-65	66-398	Total
Special Class					
Number	63	65	63	85	276
Percent	23	23	23	31	100
Third or less					
Number	26	28	26	21	101
Percent	26	27	26	21	100
Fourth-Sixth					
Number	30	31	34	30	125
Percent	24	25	27	24	100
Seventh-Ninth					
Number	31	53	35	31	150
Percent	21	35	23	21	100
Tenth or more					
Number	29	19	25	15	88
Percent	33	22	28	17	100
Total Number	179	196	183	182	740

74. Attendance did not appear to be strongly related to marital status or number of children.

TABLE 50

RELATIONSHIP BETWEEN MARITAL STATUS AND ATTENDANCE

Marital Status	Hours of Attendance 0-6	7-25	26-65	66-398	Total
Single					
Number	86	83	31	91	341
Percent	25	24	24	27	100
Married					
Number	88	102	96	86	372
Percent	24	27	26	23	100
Widowed/Divorced Separated					
Number	16	18	17	18	69
Percent	23	26	25	26	100
Total Number	190	203	194	195	782

TABLE 51

RELATIONSHIP BETWEEN NUMBER OF CHILDREN AND ATTENDANCE

Number of Children	Hours of Attendance 0-6	7-25	26-65	66-398	Total
No children					
Number	96	103	89	101	389
Percent	25	26	23	26	100
1 - 2					
Number	45	50	46	44	185
Percent	24	27	25	24	100
3 - 4					
Number	28	30	37	33	128
Percent	22	23	29	26	100
5 - 7 or more					
Number	19	20	21	19	79
Percent	24	25	27	24	100
Total Number	188	203	193	197	781

75. Slight tendencies were apparent for employed students to attend longer than unemployed students, and for relatively more of the unemployed students than employed to leave the program with less than 25 hours of instruction. Attainment of jobs accounted for this difference in a number of instances.

TABLE 52

RELATIONSHIP BETWEEN EMPLOYMENT AND ATTENDANCE

Employment	Hours of Attendance 0-6	7-25	26-65	66-398	Total
Employed					
Number	101	108	111	117	437
Percent	23	25	25	27	100
Unemployed					
Number	48	55	43	42	188
Percent	26	29	23	22	100
Housewife					
Number	21	25	23	23	92
Percent	23	27	25	25	100
Total Number	170	188	177	182	717

Note: This table does not include Work Training Program students, or students in other educational programs.

76. Similar tendencies were apparent for skilled workers to stay longer than unskilled, and for relatively more of the unskilled workers than of the skilled to leave the program with less than 25 hours of instruction.

TABLE 53

RELATIONSHIP BETWEEN SKILL AND ATTENDANCE

Skill	Hours of Attendance 0-6	 7-25	 26-65	 66-398	Total
Skilled					
Number	51	67	74	73	265
Percent	20	25	28	27	100
Unskilled					
Number	98	96	80	86	360
Percent	27	27	22	24	100
Housewife					
Number	21	25	23	23	92
Percent	23	27	25	25	100
Total Number	170	188	177	182	717

77. Students referred to the program through organizations tended to remain in the Project for a shorter time than those who heard of the program on radio or TV.*

TABLE 54

RELATIONSHIP BETWEEN SOURCE OF REFERRAL AND ATTENDANCE

Source of Referral	Hours of Attendance 0-6	 7-25	 26-65	 66-398	Total
Organization					
Number	81	76	50	63	270
Percent	30	28	19	23	100
Radio/TV					
Number	38	44	57	43	182
Percent	21	24	31	24	100
Friends/Relatives					
Number	60	64	58	61	243
Percent	25	26	24	25	100
Total Number	179	184	165	167	695

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*The finding of better attendance by those who heard of the Project through radio or TV concurs with that of an earlier study (1966). In that study, involving 279 registered students, more students were in attendance who had been referred through radio or TV (47%) than who had been referred by social welfare organizations (32%) or relatives and friends(37%).

IV. COMPARISONS OF HOURS OF ATTENDANCE FOR STUDENTS PERFORMING AT DIFFERENT LEVELS ON THE TESTS

Cross tabulations were done between hours of attendance in the program and performance of the students on the various tests given them as they entered the program. The cross tabulations are presented beginning in Table 55. The range of hours in the attendance quartiles varies from test to test as a result of the order in which tests were given and other factors related to testing procedures.

The relationship between attendance and performances on initial tests is statistically significant in the case of the SAT Paragraph Meaning Test and the Lorge-Thorndike IQ Test. Roughly, the pattern of results observed for these two tests tends to be repeated for the remaining tests, even though the relationships are not statistically significant. For most of the tests this pattern appears to entail three major features.

- The group of students who stayed the shortest time (first quartile) either were divided evenly above and below the median level of performance on the tests, or tended to perform somewhat less well. Initial test performance thus did not relate to their attendance in a consistent manner.

- Those in the middle range of attendance, who stayed a moderate length of time (middle two quartiles), performed relatively higher on the initial tests.

- However, those who stayed the longest (highest quartile) performed relatively lower on the tests, suggesting that the most dutiful attenders were the most illiterate when they joined and also the least intelligent as defined by the Lorge-Thorndike.

This last feature repeats a theme revealed in other findings of this chapter and later chapters: that the group of students attending longest in the Project included a disproportionate number of students who appeared initially to be "slower" or less advanced in literacy skills.

TABLE 55

RELATIONSHIP BETWEEN INITIAL MEDIAN TEST RESULTS AND STUDENT ATTENDANCE: GATES ORAL READING TEST

Performance	Grade Level Range	Quartiles of Hours Attended 0 - 4 No.	 %	 5 - 32 No.	 %	 33 - 78 No.	 %	 79 - 395 No.	 %	Total Number of Students
Below the median	(0.0-3.1)	48	49	43	43	56	52	56	53	203
Above the median	(3.2-7.5)	49	51	58	57	52	48	50	47	209
Total		97	100	101	100	108	100	106	100	412

x^2: not significant

TABLE 56

RELATIONSHIP BETWEEN INITIAL MEDIAN TEST RESULTS AND STUDENT ATTENDANCE: SAT WORD MEANING TEST

Performance	Grade Level Range	Quartiles of Hours Attended 0 - 16 No.	 %	 17 - 38 No.	 %	 39 - 92 No.	 %	 93 - 395 No.	 %	Total Number of Students
Below the median	(0.0-2.7)	55	51	38	44	39	44	50	57	171
Above the median	(2.9-9.5)	42	49	48	56	49	56	38	43	177
Total		86	100	86	100	88	100	88	100	348

x^2: not significant

TABLE 57

RELATIONSHIP BETWEEN INITIAL MEDIAN TEST RESULTS AND STUDENT ATTENDANCE: SAT PARAGRAPH MEANING TEST

Performance	Grade Level Range	Quartiles of Hours Attended								Total Number of Students
		0 - 18		19 - 42		43 - 95		96 - 395		
		No.	%	No.	%	No.	%	No.	%	
Below the median	(0.0-2.1)	43	57	34	44	32	40	51	63	160
Above the median	(2.2-9.5)	33	43	44	56	48	60	30	37	155
Total		76	100	78	100	80	100	81	100	315

x^2: $p < .02$

TABLE 58

RELATIONSHIP BETWEEN INITIAL MEDIAN TEST RESULTS AND STUDENT ATTENDANCE LORGE-THORNDIKE TEST

Performance	Range	Quartiles of Hours Attended								Total Number of Students
		0 - 24		25 - 53		54 - 105		106 - 395		
		No.	%	No.	%	No.	%	No.	%	
Below the median	(00 - 61)	34	53	28	42	26	40	42	64	132
Above the median	(63 -116)	30	47	39	58	39	60	24	36	134
Total		64	100	67	100	65	100	66	100	262

x^2: $p < .05$

TABLE 59

RELATIONSHIP BETWEEN INITIAL MEDIAN TEST RESULTS AND STUDENT ATTENDANCE: BEREA GESTALT TEST

Performance	Range	Quartiles of Hours Attended 0 - 27 No.	 0 - 27 %	 28 - 73 No.	 28 - 73 %	 74 - 158 No.	 74 - 158 %	 159 - 395 No.	 159 - 395 %	Total Number of Students
Above the median (more errors)	(9 - 22 errors)	18	46	18	47	18	46	27	59	81
Below the median (fewer errors)	(1 - 8 errors)	21	54	20	53	21	54	19	41	81
Total		39	100	38	100	39	100	46	100	162

x^2: not significant

TABLE 60

RELATIONSHIP BETWEEN INITIAL TEST RESULTS AND STUDENT ATTENDANCE: DRAW-A-PERSON TEST

Performance	Quartiles of Hours Attended 0 - 6 No.	 0 - 6 %	 7 - 25 No.	 7 - 25 %	 26 - 65 No.	 26 - 65 %	 66 - 395 No.	 66 - 395 %	Total Number of Students
Impaired	2	40	12	63	16	59	37	52	67
Immature	2	40	2	11	4	15	16	23	24
Average	1	20	5	26	7	26	18	25	31
Total	5	100	19	100	27	100	71	100	122

x^2: not valid

V. DELINEATION AND ANALYSIS OF STUDENTS' ATTENDANCE PATTERNS

A. Types of Attendance Patterns

The total number of hours accumulated by a student provides only one measure of attendance and of the student's interest in obtaining literacy training. Another factor, which can be in part a reflection of his motivation, is the pattern of that attendance. Students may accumulate the same number of hours but do so in different ways. In the Project some attended consistently every evening the center was open. Others attended sporadically, missing many consecutive sessions. Still others followed varied patterns at different periods in their association with the Project.*

Since the continuity of a student's attendance has important implications for his progress, as well as for the operational and research aspects of the program, session-to-session attendance records for individual students were charted by center, in the Project's central office. One detailed analysis of the charts for two centers, undertaken in 1967, involved delineating patterns in the sequence of attendance of 130 students. Five categories of attendance patterns were defined. Table 61 includes a brief description of each pattern and the number of students whose attendance records displayed the pattern.

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*Some attempts were made to relate the variation of these patterns to the students' concurrent personal experience at the center, and to their reading progress in general. However, the complexity of variables influencing students' attendance, outside of training as well as in training, placed systematic follow-up of this area of study beyond the scope of this grant. Nevertheless, it is an area meriting further study if literacy programs for adults are to be based on the actual needs of students and to stimulate them to make full use of resources which may be available for them.

TABLE 61

SAMPLE ANALYSIS OF STUDENTS' ATTENDANCE PATTERNS

Category	Number of Students
1. More presence than absence, with periods of consecutive attendance over 20 sessions.	23
2. More presence than absence, with periods of consecutive attendance under 20 sessions.	45
3. Short periods of equal lengths of presence and absence.	15
4. Long periods of equal lengths of presence and absence.	24
5. More absence than presence.	23
Total	130

B. Comparison of Attendance Patterns and Demographic Groupings

Relationships were analyzed, between the patterns of attendance in the above analysis and each of the following demographic characteristics of the students: race, sex, age, marital status, number of children, employment, occupational skill, school history, location of schooling, referral source, method, and performance on the Draw-a-Person Test. For these analyses, the categories in the attendance patterns of Table 61 were condensed into three groupings:

a) Most consistent attenders (categories 1 and 2)
b) Intermittent attenders (categories 3 and 4)
c) Poor attenders (category 5)

79. Generally little or no difference was observed in the demographic backgrounds of students following the different patterns of attendance.

80. Of the group studied, those students with the least prior schooling (sixth grade or less) were the poorest attenders. The number of students in the sample was small, however, and the finding should be considered circumspectly.

81. Of greater significance is the fact that of 56 students who had attended special classes as children, 61% were consistent attenders and only 14% were poor attenders. This finding is basically the same as that reported earlier in this chapter regarding attendance in terms of hours accumulated.

TABLE 62

RELATIONSHIP BETWEEN ATTENDANCE PATTERNS AND SCHOOL HISTORY: HIGHEST GRADE ATTAINED

Attendance Patterns	Highest Grade Attained						Total
	Special class		Sixth or less		Seventh-Tenth		
	Number	%	Number	%	Number	%	
Most consistent attendance (categories 1&2)*	34	61	11	44	18	47	63
Intermittent attendance (categories 3&4)	14	25	5	20	16	42	35
Poorest attendance (category 5)	8	14	9	36	4	11	21
Total	56	100	25	100	38	100	119**

It is likely, according to evidence from students and teaching personnel, that: 1) former special class students, 2) "slow" students with relatively low IQ's, and 3) students with evidence of visual-motor impairment all were the most regular attenders because they derived ancillary benefits from coming. For these students the center was not only a place for learning how to read, but also a place to meet and work with another adult who gave time to help, and who, in most instances, accepted the adult students' handicapping lack of skills without the critical attitude which the adult illiterate anticipated.

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*See Table 61 for definition of categories.

**The total student sample in Table 61 numbers 130. Here in Table 62, the sample has been reduced by 11 students whose school history was unknown.

CHAPTER IV

ASSESSMENT AND EVALUATION OF READING PROGRESS

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ASSESSMENT AND EVALUATION OF READING PROGRESS

A principal focus of research activity on the Project has been the assessment of students' reading ability and the evaluation of their reading progress.* In this chapter, testing and sampling procedures used in these endeavors are described, and results are presented and discussed. As has been indicated in previous reports, difficulties were encountered in the selection, use and evaluation of the tests. As a result of these experiences a new testing battery was designed and used in preliminary trial. Tests of factors presumed to be related to the reading process were included in both the old and new batteries. These tests are referred to as "associated" or "non-reading" tests in this report. Aspects of the new battery which pertain to reading are described in Chapter V, "New Tests for Assessing Reading: A Preliminary Study." Results of old and new reading tests in relation to the "non-reading" tests are presented in Chapter VI, "Results of Associated Tests."

I. TESTING AND SAMPLING PROCEDURES

A. Description of the Original Test Battery

The original test battery consisted of a series of objective tests used to measure reading, spelling and arithmetic achievement, along with a test of intelligence, and tests of visual-motor skill.

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*A review of the conditions of the Project as summarized in Chapter III, page 2 , furnishes background for understanding data presented in this chapter assessing the statistically measured accomplishments of the students.

The battery was selected, under the direction of the Office of Economic Opportunity in Washington, D.C. in late spring 1965, from tests available at that time. Tests were selected and testing points fixed at entry, 50, 100, and 150 hours of instruction, to permit comparison of students' performance in three projects sponsored by the Office. One of those was Boston's Adult Literacy Project, predecessor to the project being reported here. The battery and its selection has been discussed in Interim Report Volume II, Chapter II, page 43. Additional discussion of the tests, including a critique of each test based on experience in the Project, is presented in Appendix E of this report.

The complete battery, which was administered as soon as possible after the student entered the program, consisted of the following tests:

Gates-McKillop Reading Diagnostic Tests, Forms I and II

Stanford Achievement Test (SAT), Intermediate Level, Forms W, X, Y. Subtests:
- Word Meaning
- Paragraph Meaning
- Language Usage
- Phonics and Syllabication
- Arithmetic Applications

Stanford Achievement Test, Spelling List: Form D, all batteries

Lorge-Thorndike Intelligence Tests, Level 4, Grades 7, 8 and 9, Forms A and B Non-Verbal Battery

Berea Visual-Motor Gestalt Test (Designs 1-4)

Draw-a-Person Test (DAP)

Right-Left Discrimination Test

Partial testing batteries, given after 50, 100 and 150 hours of instruction, consisted of alternate forms of the following tests:

Gates-McKillop Reading Diagnostic Tests

Stanford Achievement Test (SAT), Intermediate Level
Partial Battery, Subtests:
Word Meaning
Paragraph Meaning

Only results of the partial batteries of tests are relevant in this chapter on the evaluation of reading progress, since only these tests were administered as follow-up measures. Discussion of the Lorge-Thorndike Non-Verbal Battery, the Berea Visual-Motor Gestalt and the Draw-a-Person tests appear in Chapter VI. The latter tests were used to measure intelligence and perceptual-motor functioning and were important to a broader understanding of the students enrolled in the program.

Results obtained in the SAT Language Usage, Phonics and Syllabication, Arithmetic Applications and Spelling tests are not discussed in detail, since these tests were used principally for diagnostic purposes and provided little information of importance beyond the fact that students were markedly deficient in the skills measured. The results on the Right-Left Discrimination Test are also not discussed here since normative data still is not available for them.*

B. Students' Initial Reading Level

The test sample for the analysis of results of tests administered at entry was made up of all registered students who were given at least one test from the initial battery. In order not to discourage continued attendance by the voluntary students, some literacy training took place along with testing beginning with their first night in the program. For various reasons, such as a student's leaving the program before testing was completed, the total number of students who took each test varied.

Results of the initial testing are summarized in Table 63, indicating median test results delineated by instructional method as well as combined. The median score, dividing the top half from the bottom half of the group, on each test is well below the Project's entrance criterion for functional illiteracy: sixth grade level or below in any one reading skill. Median scores were: Gates Oral Reading, 3.2; Stanford Achievement Word Meaning Subtest, 2.8; Stanford Achievement Paragraph Meaning Subtest, 2.2.*

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*See Appendix E.

TABLE 63

INITIAL TEST RESULTS:
MEDIAN GRADE LEVEL OF ENTERING STUDENTS

Test	MCPS		RHG		Combined	
	Median	(N)	Median	(N)	Median	(N)
Gates Oral Reading	3.0	(236)	3.4	(181)	3.2	(417)
SAT Word Meaning	2.7	(194)	2.9	(156)	2.8	(350)
SAT Paragraph Meaning	2.2	(177)	2.3	(140)	2.2	(317)

C. Sampling Procedures for Follow-up Studies

Strict criteria were used in the selection of student samples for comparison of initial test results and results of follow-up testing at 50, 100 and 150 hours of instruction. Only records of students who had completed all the tests required at each testing period were included in the basic sample. That is: students in the 50-hour sample group had completed relevant initial partial-battery tests, as well as the 50-hour testing battery. Students in the 100-hour sample had completed the initial partial-battery tests, as well as the 50-hour and 100-hour batteries. And those students in the 150-hour sample had completed tests for the initial partial battery, the 50-, 100-, and 150-hour testing periods.**

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*The assumption has been made throughout this and previous reports that the tests used do not provide measures based on ratio or interval scales. In view of this limitation, medians rather than means have been used throughout as estimates of central tendency.

**Exceptions introduced for the 100 and 150 hour samples are described in sections of this chapter reporting the results for those samples.

Thus, in the tables of results which follow, the data for the 150-hour group are the product of a subsample of students whose test data have been included in the 100-hour sample. The data for the 100-hour group are in turn the product of a subsample of students whose data were also included in the 50-hour sample. The irregularity of attendance of a majority of students (see discussion in Chapter III), and the amount of time required by the testing batteries, both had a limiting effect on the number of students whose test data were acceptable for the analyses. However, the restrictive criteria were considered to be an important means of minimizing the influence of differences among the samples of students in the different comparisons.

D. Student Distribution by Hours of Instruction and Completed Test Batteries

Table 64 indicates the number of students receiving at least 50, 100 and 150 hours of instruction who had taken all of the relevant initial tests. It also indicates how many of these students took each test of the partial battery at each of the specified testing periods. Finally, Table 64 indicates the number of students at each testing point who met the strict sampling requirements for studies comparing initial and follow-up test results.

TABLE 64

STUDENT DISTRIBUTION BY HOURS OF INSTRUCTION AND COMPLETED TEST BATTERIES

Hours of Instruction/ Tests	Number of Students
Completed 50 hours of instruction and tested on relevant initial battery.	253
Tested on 50-hour Gates	129
Tested on 50-hour SAT Word Meaning	127
Tested on 50-hour SAT Paragraph Meaning	125
Tested on complete 50-hour battery and relevant tests at initial testing.	104

(Table 64 continued)

TABLE 64 (Continued)

Hours of Instruction/ Tests	Number of Students		
Completed 100 hours of instruction and tested on relevant initial battery.	130		
Tested on 100-hour Gates		49	
Tested on 100-hour SAT Word Meaning		50	
Tested on 100-hour SAT Paragraph Meaning		49	
Tested on complete 50- and 100-hour battery and relevant tests at initial testing.			37
Completed 150 hours of instruction and tested on relevant initial battery.	79		
Tested on 150-hour Gates		58	
Tested on 150-hour SAT Word Meaning		51	
Tested on 150-hour SAT Paragraph Meaning		51	
Tested on complete 50-, 100- and 150-hour battery and relevant tests at initial testing.			25

II. FOLLOW-UP TEST RESULTS

A. Comparison of Initial and 50-hour Test Results

Comparison of the initial and 50-hour test results is based on the performance of 104 students who had been tested on the complete relevant battery (Gates, SAT Word Meaning, SAT Paragraph Meaning) initially and at 50 hours of instruction.

1. Performance on Initial Tests

A comparison of test-retest results for the two instructional methods after 50 hours of training is presented in Table 65. The first row of entries for each test there shows the median grade levels obtained initially by the students who were later retested at 50 hours. Comparison of these median grade levels with those for the total student sample in Table 63 indicates that this 50-hour sample reflects almost the same median reading ability as the larger sample from which it was drawn.

2. Performance at 50-hour Retest Point

The second row of entries for each test in Table 65 shows the median change in performance on the test after 50 hours of instruction, or after a minimum of 13 to 17 weeks of regular attendance in the program.*

TABLE 65

COMPARISON BY INSTRUCTIONAL METHOD OF INITIAL MEDIAN GRADE LEVEL WITH MEDIAN CHANGE AT 50-HOUR RETEST

Test/ Level/ Change	Instructional Method MCPS (N=54)	RHG (N=50)	Combined (N=104)
Gates Oral Reading			
Initial Grade Level	2.8	3.8	3.1
50-hour Median Change	0.0	0.1	0.0
SAT Word Meaning			
Initial Grade Level	2.5	3.1	2.7
50-hour Median Change	0.2	0.1	0.2
SAT Paragraph Meaning			
Initial Grade Level	2.0	2.7	2.2
50-hour Median Change	0.0	0.0	0.0

3. Comparison by Instructional Method

In Tables 66, 67 and 68 breakdowns, by instructional method, for each of the tests show numbers of students whose performance changed, and the range of change in grade level units from initial testing to retesting point.

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*The measurement of "change" and "range" in all tables reporting follow-up test results of the three reading tests is by median grade level units.

It is apparent from these tables that, as measured by these tests, improvement after 50 hours of instruction is very slight at best. The overall grade level change in Table 65 shows a 0.2 grade improvement on the SAT Word Meaning, but zero change on the Gates and SAT Paragraph Meaning tests.

Examination of Tables 66, 67, and 69, showing the number of students who have improved or decreased or remained the same on each of the tests after 50 hours, indicates similar results.

The ratio of number of students who test higher after 50 hours, relative to the number who test lower, is more favorable for the SAT Word Meaning test than for either the Gates or SAT Paragraph Meaning tests.

TABLE 66

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 50-HOUR TESTS AND BY INSTRUCTIONAL METHOD

GATES ORAL READING TEST

Change/ Range	Instructional Method MCPS (N=54)	RHG (N=50)	Combined (N=104)
Improved	26	25	51
(Range of improvement)	(0.1-1.7)	(0.1-2.3)	(0.1-2.3)
Decreased	21	20	41
(Range of decrement)	(0.1-0.8)	(0.1-2.6)	(0.1-2.6)
No change	7	5	12

TABLE 67

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 50-HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT WORD MEANING TEST

Change/ Range	Instructional Method MCPS (N=54)	RHG (N=50)	Combined (N=104)
Improved	29	29	58
(Range of improvement)	(0.1-2.5)	(0.1-2.9)	(0.1-2.9)
Decreased	12	16	28
(Range of decrement)	(0.1-3.0)	(0.1-3.3)	(0.1-3.3)
No change	13	5	18

TABLE 68

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 50-HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT PARAGRAPH MEANING TEST

Change/ Range	Instructional Method MCPS (N=54)	RHG (N=50)	Combined (N=104)
Improved	18	21	39
(Range of improvement)	(0.1-2.2)	(0.2-2.2)	(0.1-2.2)
Decreased	20	21	41
(Range of decrement)	(0.1-2.8)	(0.1-4.6)	(0.1-4.6)
No change	16	8	24

Analysis of the data in Tables 65 through 68, from the standpoint of method of instruction, indicates that the numbers of students whose reading skills improve, decrease, or stay the same in the two methods are similar. The measured initial ability of the students in the two methods, however, is different.

Table 65 shows that at initial testing the median grade level on each of the three tests was significantly higher for the RHG students than for the MCPS students. (Median tests: Gates, $p < .01$; SAT Word Meaning, $p < .001$; SAT Paragraph Meaning, $p < .01$.)

4. Summary of 50-Hour Retest Findings

- Initial median reading levels of the 50-hour retest sample were comparable to those of the larger sample of students from which the 50-hour sample was drawn.
- Very slight, if any, improvement in reading was measured after 50 hours of instruction for the group as a whole.
- No differences in the measured reading improvement of student groups in the two methods appeared after 50 hours of instruction.
- The students in the RHG method who were retested after 50 hours proved to have had higher initial reading scores than the comparable group of MCPS students.

B. Comparison of Initial and 100-Hour Test Results

Comparison of the initial and 100-hour test results was based on the performance of 37 students who had been tested initially on the complete relevant battery, and again after 50 and 100 hours of instruction. As noted above, this group was a subsample of the 104 students included in the 50-hour retest analysis.

1. Performance on Initial Tests

Comparison of the initial grade levels in Table 65 with those in Table 69 shows that, for each test, the median initial grade level was lower for the 100-hour subsample of students than for the larger sample of students who completed only 50 hours of instruction.

TABLE 69

COMPARISON BY INSTRUCTIONAL METHOD OF INITIAL MEDIAN GRADE LEVEL WITH MEDIAN CHANGE AT 50- and 100-HOUR RETESTS

Test/ Level/ Change	Instructional Method MCPS (N=22)	RHG (N=15)	Combined (N=37)
Gates Oral Reading			
Initial Grade Level	2.7	2.6	2.6
50-hour Median Change	0.0	0.0	0.0
100-hour Median Change	0.3	0.3	0.3
SAT Word Meaning			
Initial Grade Level	2.4	2.9	2.5
50-hour Median Change	0.1	0.0	0.0
100-hour Median Change	0.2	0.1	0.2
SAT Paragraph Meaning			
Initial Grade Level	1.9	2.0	2.0
50-hour Median Change	0.0	-0.2	0.0
100-hour Median Change	0.1	0.0	0.0

2. Performance at 100-hour Retest Point

Table 69 is arranged so that it is possible to examine the improvement rates for the same group of 37 students after 50 hours as well as after 100 hours of instruction. Examination of the median grade level changes reveals that virtually no change took place after 50 hours of instruction on any of the tests for this sample of students. This finding agrees with that presented in Table 65 for a larger sample. Some improvement is shown, however, after 100 hours of instruction: Gates, 0.3; and SAT Word Meaning, 0.2 grade levels. No improvement is shown on the SAT Paragraph Meaning test.

These results are paralleled by the data presented in Tables 70 through 72 which show, for each of the follow-up tests, the number of students whose reading skills were improving, decreasing, or remaining the same, after 50 and 100 hours of instruction.

TABLE 70

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 50- AND 100-HOUR TESTS AND BY INSTRUCTIONAL METHOD

GATES ORAL READING TEST

Initial to 50-Hour Tests

Change/ Range	Instructional Method		
	MCPS (N=22)	RHG (N=15)	Combined (N=37)
Improved	8	6	14
(Range of improvement)	(0.1-1.0)	(0.1-1.2)	(0.1-1.2)
Decreased	10	7	17
(Range of decrement)	(0.1-0.8)	(0.1-1.8)	(0.1-1.8)
No change	4	2	6

Initial to 100-Hour Tests

Change/ Range	Instructional Method		
	MCPS (N=22)	RHG (N=15)	Combined (N=37
Improved	17	10	27
(Range of improvement)	(0.1-1.2)	(0.1-1.3)	(0.1-1.3)
Decreased	5	5	10
(Range of decrement)	(0.2-0.8)	(0.1-1.2)	(0.1-1.2)
No change	0	0	0

TABLE 71

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 50- AND 100- HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT WORD MEANING TEST

Initial to 50-hour Tests

Change/ Range	Instructional Method MCPS (N=22)	RHG (N=15)	Combined (N=37)
Improved	11	7	18
(Range of improvement)	(0.2-2.3)	(0.1-2.9)	(0.1-2.9)
Decreased	5	5	10
(Range of decrement)	(0.1-3.0)	(0.1-2.1)	(0.1-3.0)
No change	6	3	9

Initial to 100-hour Tests

Change/ Range	Instructional Method MCPS (N=22)	RHG (N=15)	Combined (N=37)
Improved	13	9	22
(Range of improvement)	(0.1-2.7)	(0.1-2.3)	(0.1-2.7)
Decreased	6	5	11
(Range of decrement)	(0.2-0.7)	(0.1-0.3)	(0.1-0.7)
No change	3	1	4

TABLE 72

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 50- AND 100-HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT PARAGRAPH MEANING TEST

Initial to 50-hour Tests

Change/ Range	Instructional Method MCPS (N=22)	RHG (N=15)	Combined (N=37
Improved	6	3	9
(Range of improvement)	(0.1-1.8)	(0.3-1.7)	(0.1-1.8)
Decreased	8	9	17
(Range of decrement)	(0.1-2.1)	(0.1-4.6)	(0.1-4.6)
No change	8	3	11

Initial to 100-hour Tests

Change/ Range	Instructional Method MCPS (N=22)	RHG (N=15)	Combined (N=37)
Improved	11	5	16
(Range of improvement)	(0.1-2.1)	(0.5-2.4)	(0.1-2.4)
Decreased	8	7	15
(Range of decrement)	(0.1-2.1)	(0.1-4.4)	(0.1-4.4)
No change	3	3	6

3. Comparison by Instructional Methods

Comparison of the amount of improvement made by students in the MCPS method and students in the RHG method indicates almost no difference after 100 hours of instruction (Table 69). The median improvement in the MCPS method was a mere tenth of a grade more than that in the RHG method. This difference is evident in Tables 70, 71, and 72; but the differences are not statistically significant by chi square tests (Gates, $p < .50$; SAT Word Meaning, $p < .90$; SAT Paragraph Meaning, $p < .50$).*

In the sample of 104 students who completed 50 hours of instruction (Table 65), the initial medians for those in RHG were more than half a grade level above those in MCPS on all three tests. Such a consistent difference did not appear in the subsample of 37 students who stayed to complete 100 hours of instruction. Data relevant to this point is presented in Table 69, showing initial grade level medians for the Gates and SAT Paragraph Meaning tests to have been almost identical for the 22 MCPS and the 15 RHG students who made up the 100-hour sample. The median grade level on the initial SAT Word Meaning test of this same group, however continued to have been higher for the RHG students.

4. Summary of 100-hour Retest Findings

The 100-hour retest data may be summarized in the following points:

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*Fifteen additional students had partial batteries at time of entrance and at 100 hours, but without complete test data at 50 hours of instruction. The comparison of initial and 100-hour retest results with the enlarged sample of 52 yielded results comparable to those observed for the restricted sample of 37. The tendency for the MCPS method to show somewhat greater gains than the RHG method was slightly stronger with the enlarged sample (data are presented in Appendix F), but these were still not statistically significant by chi square tests: Gates, $p < .20$; SAT Word Meaning, $p < .30$; SAT Paragraph Meaning, $p < .30$. The tendency for the RHG students to have had somewhat higher initial test scores than the MCPS students was still evident in the enlarged sample.

- Initial reading scores of the 100-hour retest sample were lower than had been those of students who left the program before completing 100 hours of instruction.

- No improvement for this student group as a whole had been shown on the reading tests given at 50 hours of instruction, although individual students did show measured improvement on some tests.

- Some improvement was shown on the reading tests given them after 100 hours of instruction, in the order of 0.1 to 0.3 grade levels.

- Median improvement for students in the MCPS method was slightly higher than for those in the RHG method after 100 hours of instruction, but the difference was statistically insignificant.

C. Comparison of Initial and 150-hour Test Results

As of March 1, 1968, 79 students had completed 150 hours of instruction. Of these, 25 met the stringent criteria of having completed the 150-hour test battery, as well as the 100-hour, 50-hour and initial test batteries. An additional 11 students met the criteria of completing the 150-hour test battery and the initial battery, but not all of the intervening retests.* The smaller sample of 25 permits an examination of change in reading level for these same students at each of the retest points. The somewhat larger sample of 36 allows a comparison of change from initial to 150 hours of instruction only. Results from these two samples are presented separately, beginning with the smaller, more restrictive sample.

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*This less stringent sampling procedure parallels that described in the footnote on page IV-15 for the 100-hour retest sample.

1. Performance on Initial Tests

On the basis of the 100-hour retest data, it was noted that the median entry levels of reading ability had been lower for the sample group than for the total student population tested. The 150-hour retest data continued to show this trend. Relevant data on this point, for the various sample groups discussed in this chapter, are summarized in Table 73. Again, the data indicate that students in the groups which remained longer had had systematically lower initial reading test medians than did those who left the program earlier.

TABLE 73

COMPARISON OF INITIAL GRADE LEVEL MEDIANS FOR SAMPLES OF STUDENTS TESTED AT 50, 100, AND 150 HOURS OF INSTRUCTION

Test	Testing Point				
	Entry (N=317-417)	50 Hours (N=104)	100 Hours (N=37)	150 Hours Sample I (N=25)	150 Hours Sample II (N=36)
Gates Oral Reading	3.2	3.1	2.6	2.4	2.4
SAT Word Meaning	2.8	2.7	2.5	2.5	2.4
SAT Paragraph Meaning	2.2	2.2	2.0	2.0	1.8

2. Performance at 150-hour Retest Point

The data for the smaller sample of students with 150 hours of instruction are presented in Table 74. Due to the small number of students, a breakdown by method was not meaningful and the data for the two instructional methods were combined. The median changes manifested by the 25 students after 100 and 150 hours of instruction showed consistent improvement. As in previous retest analyses, no improvement was manifested on the tests after 50 hours of instruction. After 100 hours of instruction, the Gates and SAT Word Meaning tests showed some improvement. After 150 hours of instruction, not only did improvement continue on the Gates and Word

Meaning tests, but the SAT Paragraph Meaning test also began to show improvement. These findings are borne out by analysis of the number of students improving, decreasing or remaining the same on the various readministrations of the test battery (see Table 75).

TABLE 74

COMPARISON OF INITIAL MEDIAN GRADE LEVEL WITH MEDIAN CHANGE AT 50-, 100-, AND 150-HOUR RETESTS
(N = 25)

Test	Initial Grade Level	Change at 50 Hours	Change at 100 Hours	Change at 150 Hours
Gates Oral Reading	2.4	0.0	0.3	0.6
SAT Word Meaning	2.5	0.0	0.2	0.7
SAT Paragraph Meaning	2.0	0.0	0.0	0.3

TABLE 75

STUDENT DISTRIBUTION BY CHANGE ON
INITIAL, 50-, 100-, AND 150-HOUR TESTS
GATES / SAT WORD MEANING / SAT PARAGRAPH MEANING TESTS
(N = 25)

INITIAL TO 50-HOUR

Change/ Range	Gates Oral Reading	SAT Word Meaning	SAT Paragraph Meaning
Improved	9	12	7
(Range of improvement)	(0.1-1.2)	(0.1)	(0.1-1.8)
Decreased	11	5	9
(Range of decrement)	(0.1-1.8)	(0.1-3.0)	(0.1-4.6)
No change	5	8	9

(Table 75 continued)

TABLE 75 (Continued)

STUDENT DISTRIBUTION BY CHANGE ON INITIAL, 50-, 100-, AND 150-HOUR TESTS GATES / SAT WORD MEANING / SAT PARAGRAPH MEANING TESTS (N = 25)

INITIAL TO 100-HOUR

Change/ Range	Gates Oral Reading	SAT Word Meaning	SAT Paragraph Meaning
Improved	18	14	12
(Range of improvement)	(0.1-1.3)	(0.1-2.7)	(0.1-2.4)
Decreased	7	7	9
(Range of decrement)	(0.1-1.0)	(0.2-0.7)	(0.1-4.4)
No change	0	4	4

INITIAL TO 150-HOUR

Change/ Range	Gates Oral Reading	SAT Word Meaning	SAT Paragraph Meaning
Improved	20	17	14
(Range of improvement)	(0.2-2.1)	(0.1-3.5)	(0.1-3.9)
Decreased	3	3	5
(Range of decrement)	(0.1-0.5)	(0.1-2.1)	(0.1-1.8)
No change	2	5	6

3. Comparison by Instructional Methods

In order to compare the measured grade level progress of student groups in the MCPS and RHG methods after 150 hours of instruction, a larger total sample of 150-hour test records was required. The sample was therefore increased by including students who had taken both the initial and 150-hour tests, and by disregarding the requirement for both 50- and 100-hour retest data as well.

For this increased 150-hour sample, Table 76 presents initial grade level medians and median changes for the Gates, SAT Word Meaning and Paragraph Meaning tests, showing results separately for the MCPS and RHG student groups. Tables 77, 78, and 79 show, for this same sample, the number of students whose scores improved, decreased, or remained the same on the three tests.

Overall, the data do not point to any consistent advantage of one method over the other. The apparent tendency for MCPS to bring about more improvement in Word Meaning and for RHG to bring about more improvement in Paragraph Meaning cannot be viewed as reliable due to the small size of the sample and the consequent instability of the median change measure.

TABLE 76

COMPARISON BY INSTRUCTIONAL METHOD OF INITIAL MEDIAN GRADE LEVEL WITH MEDIAN CHANGE AT 150-HOUR RETEST

Test/ Level/ Change	Instructional Method	
	MCPS (N=25)	RHG (N=11)
Gates Oral Reading		
Initial Median Grade Level	2.3	2.4
150-hour Median Change	0.4	0.7
SAT Word Meaning		
Initial Median Grade Level	2.1	2.9
150-hour Median Change	0.7	0.1
SAT Paragraph Meaning		
Initial Median Grade Level	1.8	2.0
150-hour Median Change	0.5	1.1

TABLE 77

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 150-HOUR TESTS AND BY INSTRUCTIONAL METHOD

GATES ORAL READING TEST

Change/ Range	Instructional Method	
	MCPS (N=25)	RHG (N=11)
Improved	23	7
(Range of improvement	(0.1-2.1)	(0.2-2.0)
Decreased	1	2
(Range of decrement)	(0.1)	(0.1-0.5)
No change	1	2

TABLE 78

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 150-HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT WORD MEANING TEST

Change/ Range	Instructional Method	
	MCPS (N=25)	RHG (N=11)
Improved	16	6
(Range of improvement	(0.1-3.5)	(0.1-2.8)
Decreased	1	3
(Range of decrement)	(2.1)	(0.1-0.3)
No change	8	2

TABLE 79

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 150-HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT PARAGRAPH MEANING TEST

Change/ Range	Instructional Method	
	MCPS (N=25)	RHG (N=11)
Improved	12	8
(Range of improvement)	(0.1-3.9)	(0.3-3.9)
Decreased	3	3
(Range of decrement)	(0.3-1.8)	(0.1-0.7)
No change	10	0

- More students whose test performances on the DAP were judged "impaired" were in the group with below-median reading improvement.

- The Bender Gestalt test data are inconclusive because of the small number of students in the sample who took the test.

- Surprisingly, the students with less reading improvement on the Gates tended to have performed better on the Berea Gestalt test (exact probability = 0.06).

In considering the last finding, it must be remembered that the entire sample consisted of illiterate adults. A poor performance on the Berea by an illiterate suggests the possibility that the illiteracy may be related to visual-motor problems. A good performance on the Berea by an illiterate suggests only that other factors than visual-motor difficulties are related to the illiteracy. What these other factors are cannot be specified from available data for the group under consideration. However, in view of the results reported on the WAIS Vocabulary and DAP tests it is possible that these factors may be related to intellectual deficiency or retardation.

One must be cautious in interpreting the results obtained. It is necessary to emphasize that these data must be considered as merely suggestive, due to the small sample and the fact that the probabilities reported exceed the conventional confidence level which has been accepted in other parts of this report. Furthermore, it should be stressed that the improvement groups are based on the improvement reading scores of only one test--the Gates.

With these reservations, the data may be interpreted to suggest that adult illiterates with visual-motor impairment are able to make greater gains in reading than those whose illiteracy is associated with other factors, such as generally low intellectual level.

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TABLE 103

DISTRIBUTION OF 150-HOUR STUDENTS BY PERFORMANCE ON ASSOCIATED TESTS AND ABOVE OR BELOW MEDIAN IMPROVEMENT ON THE GATES ORAL READING TEST

Associated Test	Number of Students Improvement Low	Improvement High
	(N=16)	(N=18)
Lorge-Thorndike		
Below Median	8	9
Above Median	8	9
	(N=7)	(N=7)
WAIS Vocabulary		
Below Median	5	2
Above Median	2	5
	(N=13)	(N=9)
Draw A Person Test		
Impaired	9	4
Immature	2	3
Average	2	2
	(N=6)	(N=7)
Bender Gestalt		
Above Median (more errors)	4	3
Below Median (fewer errors)	2	4
	(N=14)	(N=14)
Berea Gestalt		
Above Median (more errors)	4	9
Below Median (fewer errors)	10	5

CHAPTER VIII

VOLUNTEER TUTORS IN THE PROJECT

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VOLUNTEER TUTORS IN THE PROJECT*

BACKGROUND

Volunteer tutors, working under professional supervision in a one-to-one relationship with students, have participated in the training of adult illiterates since the inception of the MCPS literacy training system. The importance of the volunteer is apparent from a review of the assumptions which are fundamental to the instructional approach developed by the Massachusetts Council for Public Schools, Inc., prior to the Project reported herein. These basic assumptions are that:

- Adult illiteracy is due to early failure of the illiterate to master basic phonic, linguistic and kinesthetic skills.

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* In keeping with the reporting about the students in the previous chapters, this chapter about the tutors is written analytically and dispassionately without reference to the spirit of the Project. Limited to the statistical evidence, and without comment about the qualitative values which were accrued, this chapter may tend to present a rather negative picture of the participation of volunteers. For example, the relatively large proportion of tutor-candidates who participated in the training and then failed to attend in the center long enough to receive a regular assignment, gives rise to questions regarding the wisdom of spending time and effort in the recruitment and training of volunteers.

However, in balance, there have been hundreds of responsible, capable, regular-attending tutors engaged in this work, who have donated not only their time but weekly expense for transportation and baby sitting, in order to work in the program. The quality and impact of their gifts, which have changed the lives of many students, should not be diminished by statistical evidence such as that presented here.

- This failure has resulted from insufficient training in the perceptual analysis of word forms and in alphabetic and linguistic skills.

- The illiterate's early needs for more training and personal attention either were not recognized or were impossible to satisfy in situations such as overcrowded classrooms.

- A one-to-one relationship between student and teacher is necessary to remedy the above deficiencies.

- Training and employment of volunteers is necessary to maintain such a favorable student-to-teacher ratio, since the use of professional teachers in such ratio is impractical and prohibitive economically.

The solicitation of community help in solving a problem such as the illiteracy of some of its adult citizens was relatively new at the time that the Massachusetts Council instigated its first project in this area. Little experience in the use of volunteers as tutors had occurred, and little documentation of such experience was available.

As a result, not much was known about how to attract, recruit, train, and retain volunteers. Nor were the consequences of their involvement in educational endeavors which crossed economic and social lines well understood. Under these circumstances subjects of interest in studying the use of volunteers as tutors for adults, included not only those mentioned above, but answers to such questions as:

- What kinds of people would be attracted to volunteer work in a large urban setting?

- What attitudes would they bring with them?

- What would their reactions be to those receiving their help?

- What kinds of changes, if any, might occur in their social attitudes or behavior as a result of their participation in the project?

The primary focus of the Projects' efforts regarding volunteer tutors, was necessarily the continuing provision of sufficient numbers for the teaching assistance of the volunteer students. The identification of major problems and advantages in the use of volunteers also received attention.* Wherever it was possible to do so without infringing on these efforts, data were collected which held promise of throwing light on the questions listed above.

The purpose of this chapter then, is to review the Project's findings with regard to the following areas:

- Recruitment of the volunteers
- Demographic characteristics of the tutors
- Tutors' attendance in the Project
- Tutors' expectations about adult illiterates and illiteracy.
- Changes resulting from tutors' participation in the Project

I. SOURCES OF INFORMATION

Much of the information for the studies reported in this chapter was obtained during the periods of the OEO grants from registration forms completed by tutor-candidates at the beginning of the first session of their tutorial training course. These forms were revised and a set of questionnaires dealing with the tutor-candidates' expectations about adult illiterates and illiteracy were added later.

Sample sizes for the studies reported in this chapter vary as did those in the studies about the students. Factors influencing the variation include: changes and improvements in research instruments, tutor attendance and drop out, sampling requirements of the specific purposes for which particular studies were undertaken.

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* See page IX-24 ff. and Appendix J for information and material related to tutors' training, responsibilities, tutoring reports, desirable qualities for tutoring, and analyses of problems related to tutors' attendance and drop out.

II. RECRUITMENT OF VOLUNTEER TUTOR-CANDIDATES

A. Number of Volunteers

The basic tutor population reported about in this chapter is the group of 786 tutors who were recruited, registered, trained in a major training course, and assigned for duty in a center at some time after the awarding of the first OEO grant. In addition to these tutors, a sizeable group who were already tutoring in the centers which had been previously established by the Massachusetts Council continued to participate as the new government-sponsored centers were organized. In further additions, other individuals attended centers or training sessions, began enrollment procedures, sometimes participated in special tutorials held occasionally at individual centers. In all, almost 1500 tutors or tutor-candidates were attracted to the Project over a three and one-half year span, from 50 different local communities.

B. Methods of Recruitment

Volunteers for the MCPS centers were recruited largely by appealing to church groups, civic organizations, clubs, agencies, libraries, business organizations, and social service oriented individuals and groups. Letters and posters were distributed seeking volunteers willing to donate one or two evenings a week to the cause of teaching illiterate adults. Addresses were made to a wide variety of groups, apprising them of the scope of the problem both locally and nationally, and enlisting their aid. Press releases were published in local weekly and daily newspapers, house publications of organizations. Public service appeals were broadcast by radio stations and telecast in spot announcements.

Typical of the many organizations informed of the need for volunteers were groups such as the American Association of Retired Persons, Chambers of Commerce, the Junior League, League of Women Votors, college alumni associations in the Greater Boston area, the National Association for the Advancement of Colored People, YWCA, Arlington Street Church Singles Club, Jewish Community Center, Sylvania Electric Company, Prudential Insurance Company, Temple Israel, Roxbury Federation of Neighborhood Houses, Benevolent Fraternity of Unitarian Churches.

Many volunteers, already participating in the program, recruited friends; and students also inspired friends or relatives to join the Project as tutors. Sometimes students themselves were able to participate in tutorial training sessions and to repay the Project for the help they had received by becoming tutors for new enrollees.

Formal screening of tutors consisted of ascertaining that candidates could read and write. Informal screening occurred in the training sessions if potential tutors and the Head Supervisor agreed that they could not handle the work involved. On rare occasions as tutors entered a center, a supervisor judged a candidate to be obviously unsuited because of emotional or other difficulties.

C. Sources of Referral

Periodically, reviews were made of the Project's recruitment efforts. One such analysis involved responses to a registration question inquiring about how tutors had learned of the program. Data from this sample of 500 tutors, a subgroup of the basic 786 mentioned above, is summarized in Table 104.

In this group more tutors learned about the Project from a friend than from any other source, suggesting that once a project makes an initial impact on the community, considerable recruitment takes place automatically through word of mouth.* Organizations, newspapers, and radio were cited next most frequently by tutors as their source of introduction to the Project.

TABLE 104

DISTRIBUTION OF TUTORS BY SOURCE OF REFERRAL

N=500

Recruitment Technique	No. of Tutors	Percent
Radio	41	8
TV	21	4
Newspaper	130	26
Organization	130	26
Friend	150	30
Other	25	5
Former Student	3	1
Total	500	100

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* Another such review occurred as a part of a separate study with a small sample of tutors, seventy-seven percent of whom reported that they had encouraged friends to join them in this volunteer work.

III. DEMOGRAPHIC CHARACTERISTICS: COMPARISONS OF TUTOR AND STUDENT POPULATIONS

This section summarizes data collected from the registration forms about the personal, occupational and educational characteristics of the tutor population, including their teaching qualifications and experience with disadvantaged groups. Where possible, data regarding the tutor group has been juxtaposed to similar data regarding the student population. Thus illustrations are provided of the breadth of differences between the two groups of people being brought together in a working relationship through the aims in this project.

A. Personal and Family Characteristics

In Table 105 personal and family characteristics of the volunteer tutors as a group are juxtaposed for comparison with the same characteristics of the students in the Project. Tutors included are the 786 in the basic sample who had formally registered and participated in the Project before April 1968. Students included are the 797 who had been formally enrolled in the Project during the same period. Findings presented there are summarized below.

- Women tutors predominated in a ratio of four to one compared to the student group, where men were predominate in a ratio of almost three to one.

- Tutors as a group tended to be slightly older than the students, with the median age for the tutors being 30 years, whereas the median age for students was 27. This difference was due largely to the fewer number of students who were older than 42 and the greater number who were younger than 23, relative to the distribution of tutors in these respects.

- While the proportion of students who were married was almost identical to that of the tutors, the students tended to have somewhat larger families.

- About half of the tutors were married and had children.

TABLE 105

COMPARISON OF TUTOR AND STUDENT POPULATIONS: PERSONAL AND FAMILY CHARACTERISTICS

IN PERCENTS

Characteristics	Tutors N=786	Students N=797
Sex		
Men	20	72
Women	80	28
Age		
23 or younger	23	35
24-29	26	21
30-41	25	26
42-75	26	18
Marital Status		
Single	48	43
Married	42	46
Widowed	4	2
Divorced, Separated	5	7
Unrecorded	1	2
Number of Children		
None	58	49
1-2	23	23
3-4	12	16
5 or more	4	10
Unrecorded	3	2

B. Occupation and Employment

Table 106 provides a breakdown of the occupational and employment status of the tutors in comparison with that of the students.

- More than fifty percent of the tutors were in white-collar, business, managerial or professional positions, which with few exceptions are closed to the adult illiterate student.
- Almost twice as many tutors as students were homemakers.

- Considerably more tutors than students were employed. That unemployment was less of a problem for tutors than for students was apparent by the fact that all of the unemployed tutors were accounted for by the categories of "Homemaker" and "Student" outside the Project, whereas only one-half of the unemployed students in the Project were accounted for by these categories.
- In summary: tutors for the most part, were employed and of white-collar or "higher" occupational level. The student group was comprised of individuals of essentially "lower" occupational level, modally unskilled workers, for whom employment was a problem.

TABLE 106

COMPARISON OF TUTOR AND STUDENT POPULATIONS: OCCUPATIONAL AND EMPLOYMENT CHARACTERISTICS

IN PERCENTS

Occupation	Tutors N=786	Students N=797
Professional	28	0
Business, Managerial	10	0
White Collar	22	0
Skilled	6	33
Unskilled	1	45
Homemaker	21	12
Student (or work trainee)	10	8
Unknown or unrecorded	2	2
Employment Status		
Employed	65	55
Unemployed*	30	43
Retired	2	0
Unrecorded	3	2

* "Unemployed" includes heads of households who are unemployed, and homemakers, students, and work trainees.

C. Education

Table 107 shows the educational background of the tutors at the time of their registration, which may be compared with that of the students by referring to Table 8 in Chapter II, page II-5.*

- Only one percent of the tutors, but all of the students, could be categorized as having had less than a twelfth grade education.
- About seventy-five percent of the tutors had had some college study, a college degree, or an advanced degree.
- Overall, the tutors who were attracted to the Project's work were themselves highly educated.

TABLE 107

EDUCATIONAL BACKGROUND OF TUTORS

N=786

Highest Level Attained	Percent of Tutors
Below 12th grade	1
High School Graduate	9
Vocational Training beyond High School	8
Some College Study	25
College Graduate	30
Some Graduate Study	9
Master's Degree	11
Doctoral Degree	2
Unrecorded	5

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* It is interesting to note that the educational background of some members of each group was changed by their participation in the Project. Some students gained reading skills which permitted them to qualify for other adult education courses, high school equivalency status, or job training programs which they had previously been unable to enter. Some tutors, who found tutoring more satisfying than their original vocation, enrolled for graduate work and received degrees which would permit them to become certified teachers or social service workers.

IV. TUTORS' TEACHING BACKGROUND AND EXPERIENCE WITH THE DISADVANTAGED

The teaching background of the tutors and their experience with different disadvantaged populations were analyzed from the tutor registration forms and a questionnaire. A sample of 607 responses was studied with the following results.

- Fewer than one of every five tutors had a teaching certificate. Thus, it is unlikely that many of the tutors had volunteered a skill for which they might have received remuneration as professionals.
- Of the tutors who did have teaching certificates, relatively few had had extensive teaching experience. Half of these had taught only one or two years and few had taught for more than six years.*
- Those with teaching experience were almost without exception elementary school teachers who had not had previous experience in teaching adults.
- Fifty-two percent of the tutors reported having had contact with the poor, thirty percent with the handicapped, twenty-six percent with the mentally retarded and twenty percent with the emotionally disturbed.

V. TUTORS' ATTENDANCE

As a rule tutors were trained in the use of the MCPS method in a tutorial training course which extended over five evenings and included orientation to the Project, instruction in the use of reading materials and teaching techniques, and an observational session in one of the literacy centers.**

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* Some tutors valued the opportunity to work in the Project as a means of serving, while retaining some teaching experience which family responsibilities precluded their pursuing in a more time consuming commitment.

** A more detailed description of the tutorial, its content, its import in the program and problems related to it is found in Chapter IX and in Appendix J.

Tutors were not asked to commit themselves to staying in the program for any set length of time, although the importance of regularity of attendance was stressed and the likely dependence of the student on the tutor was explained in the tutorial sessions. Two sessions per week, each lasting two hours were requested of tutors to coincide with their student's attendance twice a week. More often than not, however, they were unable to donate more than one session per week.

A. Attendance Distribution of Tutors

Records were kept in the centers of tutors' attendance and forwarded monthly to the central office for program-wide analyses. Table 108 reflects the attendance patterns recorded for the group of 786 tutors.

- Thirty-four percent of this group never tutored at all even though they registered and attended from one to five meetings of a tutorial course.
- Of those who did tutor, almost half tutored longer than five months, and a quarter, longer than ten months.

TABLE 108

DISTRIBUTION OF TUTORS BY MONTHS IN THE PROJECT*
N=786

Number of Months	Percent of Tutors
Never Tutored	34
1-2	16
3-5	20
6-10	15
11-36*	15

* Length of participation in the Project was calculated from the first night of attendance at a center as a tutor, rather than trainee, to the last night of attendance. This procedure could be seen to both underestimate and overestimate the amount of volunteer tutor time committed to the project. It underestimates, in that the time required for the training sessions is not included. It overestimates, if tutors' attendance was sporadic with long periods of absence. Since the unit of time used is months, this possibility was checked by recalculating attendance according to the actual number of months during which the tutor was present for at least one evening session. A sample of 176 tutors, checked in this way, provided essentially the same attendance distribution as is presented here. Some of the tutors in the group attending 11 to 36 months were still in attendance after this analysis was made as of the closing date for data collection.

B. Impact on the Students and Project

Without equivalent data collected in similar circumstances it was difficult to evaluate these attendance records. Viewing the data from an operational standpoint, it may be noted that the average tutor, who stayed in the Project for five to six months, could have assisted a student whose attendance was reasonably regular, through about eighty hours of instruction. However, the Project's experience was that attendance of many students was not regular. Thus, on the average, it was improbable that the same tutor would see a student through even fifty hours of instruction.

There were regularly attending tutor and student pairs, however, where the working relationship extended over many more hours, in some cases for as long as two to two and one-half years.

The impact on the student of being tutored by various tutors, rather than one over a long period of time, was complex to evaluate for a number of reasons; and no statistical data which could be rigorously brought to bear on the question was available in sufficient quantity. However, students, tutors and supervisors all commented on the difficulty created by short term substitutions or complete changes in the working teams, and about the set-backs which resulted. In those instances where students were already working with different tutors on alternate nights, any replacements compounded the problems. In only a few situations where the team assignments had not been mutually satisfactory from the beginning were changes regarded favorably.

Considerable expenditures of Project time and resources were used in providing the training courses for new tutors. Since there were circular effects to the irregular attendance or drop out of either students or tutors, the attendance of both, and the replacement of tutors, constituted a major operational problem.* Efforts toward resolving this problem occurred in different parts of the project and at different levels.

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* See Chapter IX, p. IX-39 ff. for additional information regarding the implications of related problems and the Project's efforts to solve them.

C. Comparison of Attendance and Demographic Characteristics

One research approach to the problem was to seek factors about the tutor-candidate groups which, when related to their subsequent attendance patterns, might prove to be predictors of attendance, and thereby be useful in establishing recruitment policies for similar projects.

A small sample study, carried out early in the program, investigated the possible relationship of attendance and certain demographic variables from the tutor registration forms. Two tutor groups were identified as being less satisfactory on the whole for a continuing program, such as the Project where success was apt to require lengthy attendance on the part of the student and his tutor.

- The group of tutors who were also students in college were found to be less reliable for a year round program. While on the whole they were enthusiastic and capable, their college vacation and examination periods frequently interrupted their attendance during the year; and in the summer they tended to leave the city altogether. For a full time summer program of limited duration these individuals might be excellent tutors providing they could afford to volunteer their time.

- Another group of poor attendance "risks" consisted of those tutors who lived farthest from the centers where they tutored. They tended to drop out early in comparison to those who lived closer.

A more extensive study was undertaken attempting to relate demographic characteristics to attendance for a sample of 610 tutors. These characteristics were related to four categories of subsequent attendance on the part of the tutors.

- Tutors who never tutored but received some training.
- Tutors who tutored one to three months.
- Those who tutored four to ten months.
- Those who tutored eleven or more months.

Statistically significant relationships ($p < .05$ or less) were observed in about one-third of the cross tabulations.

Certain aspects of the Project and the complexity of the data rendered it not practical to use most of the findings for limiting recruitment "markets" or otherwise screening candidates.

- For instance, although relatively more men dropped out even before tutoring assignments were complete, there were a number of men who continued to tutor into the group of longest attenders with records of two to three years without leaves.
- In another example, while there was a relatively large early drop out of married tutors, of the tutors who stayed for more than eleven hours, almost two-thirds were the married ones.
- One clear finding was that tutors under 23 years of age tended to have relatively high drop out rates before tutoring and relatively low continuation of service.

The most likely long-term attenders were:

1) tutors who were married;
2) tutors who had children;
3) tutors whose occupations were described as professional, white-collar, homemaker, skilled;
4) tutors who were over thirty years of age.

In most of these categories, however, data were sufficiently inconclusive to warrant caution in their use for predictive purposes.

Attendance was found not to be related to the following variables:

- The number of children at home
- The level of education of the tutor
- Teaching certification
- Number of years in teaching
- Level of formal school teaching engaged in
- Previous tutoring experience

D. Comparison of Attendance and Initial Attitudes Toward Illiterates and Illiteracy

In order to understand the attitudes of the tutors which might be of pertinence in their work with the students, a series of quantifiable questions were asked on a questionnaire on the tutors' first night at a training session. It was anticipated that similar questions used in a follow-up might document some kinds of changes in attitudes as a result of the tutors' work in the Project. Also, as a part of the search for attendance predictors, studies were undertaken relating this data from both the initial and follow-up questionnaires, to the tutors' subsequent attendance in the Project.

Four areas of inquiry were posed for the tutors' reaction in both questionnaires:

1) Most important causes of illiteracy
2) Most common reasons for adult illiterates to want to join a literacy program
3) Most important factors in overcoming illiteracy
4) Most important attributes in a tutor

In each area lists of from seven to ten alternatives were provided for the tutors' selection of three top choices.

One study of initial questionnaires of a sample of 115 tutors is reported because it was representative of the results of subsequent follow-up studies, and also could be related to the subsequent attendance of the sample group.

These tutors had responded to the questions in one of the following tutorials: February, April, July or October, 1967. As of March 1, 1968 their attendance records placed them in the following categories:

1) Seventeen never tutored.
2) Twenty-nine had tutored one to three months.
3) Forty-four had tutored four to six months.
4) Twenty-five had tutored seven or more months.

Summaries of results from their rank-ordered responses are presented below, based on: 1) top choices selected by consistently fifty percent or more across all the attendance subgroups; and 2) top choices of consistently less than twenty-five percent of all subgroups.

Most important causes of illiteracy - Fifty percent or more tutors in the sample selected:

- Emotional problems and blocks to learning
- Lack of early encouragement to read

Fewer than twenty-five percent selected:

- Insufficient intelligence
- Laziness or procrastination
- Distrust of reading

Two marked differences in responses regarding the causes of illiteracy distinguished the group who never tutored and the long term attenders among the tutors. The latter gave slightly more weight to "physical conditions at home and school" as a cause of illiteracy than did the poorer attenders. It is interesting to note that those who never tutored at all gave more weight to "hostility toward teachers and others" as a cause of illiteracy than did those who did tutor at least one or more months.

Most common reasons for adult illiterates to want to join a literacy program - Fifty percent or more selected:

- To gain competence in handling practical everyday life situations
- To improve earning capacity
- To gain access to knowledge, news or pleasure through reading

Fewer than twenty-five percent selected:

- To avoid loss of economic benefits (such as welfare payments)
- To improve social status
- To meet people, socialize, etc.

This group of tutors appeared not to place particular emphasis on social satisfactions as the students' reason for joining the program.

Most important factors in overcoming illiteracy - Strong agreement among all the tutors in the study was found on only one factor as being important in overcoming illiteracy.

- The "present" attitudes and motivations of the adult learner

Fewer than twenty-five percent selected:

- Amount of time spent in teaching
- The social experience accompanying learning
- Tests and measurements of progress
- The type of building, facilities, etc.

Tutors of the attendance subgroups disagreed on the relative importance of other factors. The "low" attenders focused on tutors themselves, and their own skills, as factors of importance in overcoming illiteracy; while the "high" attenders focused on more objective choices such as: systems and methods of instruction, and the quality of their supervisors. These latter trends differentiating the tutor attendance subgroups are the most dramatic found in this study.

Most important tutor attributes - Fifty percent or more of the tutors in the sample selected:

- Understanding
- Patience
- Resourcefulness, creativity and imaginativeness

Fewer than twenty-five percent selected:

- Authority or ability to enforce discipline
- Educational background
- Ability to keep good records or evaluate experience

In summary: with one exception, there were no dramatic differences in the distribution of top choices among the four attendance subgroups of tutors. Irrespective of their attendance patterns, the tutors in this study selected essentially the same categories to describe:

1) the causes of illiteracy,
2) the reasons why illiterates joined a remedial reading program, and
3) the kinds of attributes which defined a good tutor.

It was against this background of overall uniformity of choice that any difference between the attendance subgroups assumed added importance. The one exception in the distribution of top choices occurred with the question of the factors which were deemed to be important in overcoming illiteracy. Those who, though trained, tutored briefly or not at all, selected personal strengths such as the "tutor's personality and ability to relate to the student", as the important factors. The high attenders placed--after "attitudes and motivations of the student"--relatively greater emphasis on more objective factors such as "the teaching systems and materials."

VI. REPORTS OF ADDITIONAL RESPONSES FROM VOLUNTEERS

A. Attitudes Toward Illiterates and Illiteracy

Another set of comparisons involving these same four areas of inquiry was made with the responses of three other samples of tutors and one sample of RHG* teaching assistants. Selection of the groups, described below, was a function of different questionnaires having been administered at different times, and of numbers of tutors who had been in the Project long enough for follow up responses to questionnaires. The groups were:

1) Eighty tutors responding to an initial questionnaire at the time of their first contact with the program, designated as the "inexperienced" group.
2) A separate group of eighty tutors who had not received the initial questionnaire, but who had answered the same questions after seven or more months in the Project, designated as the "experienced" group.
3) A group of twenty-nine tutors who had received both initial and follow up questionnaires after about seven months experience in the Project.
4) A group of experienced volunteer teaching assistants from the Reading in High Gear centers.

In general the top choice responses by these four groups of tutors, to the four areas of inquiry about illiterates were strikingly comparable to the consistent top choices of the 115 tutors in the study of "initial" questionnaires reported above. In short, the various subsamples of tutors were apparently homogeneous. Basically the same distribution of responses occurred for inexperienced as compared to experienced tutors, and for the initial responses as compared to the follow up responses of the follow up group.

B. Changes in Expectations Regarding Adult Illiterates

As part of the documentation of tutors' initial attitudes three unstructured, open-ended questions inquired about the tutor-candidates' expectations: of the adult illiterate as a person, of the adult illiterate's personal strengths, and of the adult illiterate's personal weaknesses. A follow-up questionnaire asked the volunteers, after several months in the Project, to comment on what they had found adult illiterates to be like in these same three respects.

Tutors varied considerably in the manner in which these questions were answered. Some merely listed a few adjectives, whereas others gave longer descriptions of their expectations and later observations. Tutors did, however, tend to be relatively consistent from initial to follow up in their personal style of answering.

A wide range of descriptive characteristics were used, making it difficult to score and compare them in a reliable system. Because the data is interesting, though not meaningfully quantifiable, the findings are reported here in impressions and illustrations. The following summary statements were based on close analyses of the initial and follow up questionnaires of 40 tutors.

- Tutors who showed some change in attitude did so in the direction of a more positive view of the adult illiterate. The student was described as being "more confident," "socially likeable," "sincere" and "intelligent," at the time of follow up. Fewer tutors used descriptive words such as "defensiveness," "dullness," or "social deprivation."

- Some tutors did not appear to change their view of the adult illiterate at all, adding nothing and substracting nothing.

- Some tutors, while giving basically the same response, added something on the follow up questionnaire which suggested their greater sensitivity to the student, such as noting that the student "feels left out because of reading disability".

- A frequently noted tendency was the tutors' change from clichés or standard generalities to more concrete, personal and practical observations. Examples of the first group were: "sincere", "ignorant", "poor", "courageous", "unskilled". Examples of follow up comments were: "desires to make up for lost time", "fatigues after 30-45 minutes of study", "speech impediment", "fairly good memory for repetitious acts", "shows enthusiasm for life". The tutors seemed to be talking more about their particular students on the follow-up questionnaire.

- Some volunteers rationalized, for themselves, any changes of attitude or understanding, as did one volunteer who initially expected the adult illiterate to be "ignorant, hopeless, poor, a product of a 'slum of despair'". He commented after about 6 months of participation: "I am sure that the illiterate who comes to the center to be tutored is not typical of the majority of the illiterates who do not have the incentive to learn nor the hope to improve their lot. Those that do come here to learn are intelligent and imaginative. They have developed interesting compensations for their inability to read. My two students have both had unusually good memories."

C. Comments on Personal Changes

One of the items in an early version of the follow up questionnaire asked the tutor directly: "How, if at all, have you changed as a result of your work in the Project for Adult Literacy?" Responses to this question were varied. It was possible to organize the answers into the following categories; although complete quantification of the answers was difficult and rendered them less meaningful.

- Approximately 25% emphasized change in interpersonal contacts and insights. Tutors noted that they "had a glimpse into other people's worlds" or "had learned more tolerance for persons less fortunate than I" or had "come to appreciate my own good fortune". Within this category responses were about evenly divided between benefits deriving from social contacts and changes in the personal outlook on self and the world.

- About 30% of the responses emphasized personal learning. These were relatively evenly divided between learning about the illiterate or illiteracy, and learning new skills as a tutor or teacher. Example: "I gained increased skill as a tutor."

- About 10% fell into the category of changes in general philosophy and life patterns. Example: "I found that education isn't everything, some of these people will accomplish more in spite of a handicap." Changes in the life patterns are reflected in phrases such as: "discussing with my family" and "applied for more training."

- About five percent reflected that the impact of the program had been an increase in personal satisfaction, with such comments as "pleased with myself for being in contemporary contact."

- About 10% indicated that no change at all had taken place.

- Five percent of the responses could be categorized as complaints: reflections of disappointment in rate of progress or tutor's loss of motivation. Some of the respondents were tutors who had dropped out of the program.

- Finally, 15% of the tutors did not respond at all.

D. Community Programs and the Illiteracy Problem

Other areas in which responses of these volunteers were solicited included: their selection from a list of predictions regarding the possibilities of success for a community program in solving the problem of adult illiteracy.

All of the above groups tended to be relatively optimistic whether experienced or inexperienced, and at initial questioning as well as at follow-up periods. The follow-up group showed a tendency to have become more optimistic over the period of their experience in the Project. In general the rank order of response selections by the MCPS tutors was: 1) "Good chance"; 2) "Very good chance"; 3) "Probably help a little"; 4) "Excellent". The RHG teaching assistants selected "Very good chance" as top choice with "Excellent" and "Probably help a little" ranking equally as second selection.

E. Participation in Civic and Community Activities

From a question regarding tutors' participation in civic or community activities asked of these same four groups, it was interesting to note that participation in the Project was "a first" experience in civic or community activities, for about one-fifth of the tutors in the MCPS groups. In this same analysis proportionately more than twice as many tutors in the experienced group reported participating "often" in community activities as in the "inexperienced". Of the MCPS follow-up group, more than twice as many reported participating "often", in their follow-up questionnaire as had reported in that category on their initial questionnaire. The RHG teaching assistants were evenly divided between those who reported participating "often" and those who reported participating "occasionally".

F. The Tutors' Learning

In the earlier responses from volunteers' questionnaires, many of the comments were made in terms of the Project's personal meaning for the tutors. On the assumption that this factor would be a controlling one in terms of tutors' attendance and continued participation, efforts were made to collect more information of this nature before the termination of the research project. Another revision of the follow-up questionnaire was completed and sent to 96 tutors who had been trained in 1967. Several new open-ended questions explored further into what made tutoring a personally meaningful experience for the volunteers. While the number of completed questionnaires received by the cut-off date for data was relatively small, the findings are useful in rounding out the analyses already presented.

Tutors were requested to report things they had learned about the following as a result of participating in this Project: 1) the community, 2) the poor or disadvantaged, 3) illiterates or illiteracy, 4) yourself, 5) teaching. Each subject was responded to by 55 to 68% of the 21 tutors who returned the form before the closing date which occurred one month after the mailing took place.

- The main things learned about the community were: that programs to help are available; that there are a "great number" of devoted persons working to help, and that there are many illiterates in need of help.

- The things learned about the poor or disadvantaged ranged from statements about their need for help, to the observation that the illiterate is not always poor. Most instances were idiosyncratic comments which could not be readily categorized.

- Regarding illiterates or illiteracy, tutors most frequently reported empathizing with the illiterates' feelings in such allusions as: the "constant daily humiliating reminder that they have of their inadequacy."

  Other comments concerned the number of illiterates in the community, causes of illiteracy and the high intelligence of some students in spite of their being illiterate.

- Almost all the comments concerning what tutors learned about themselves involved either the discovery of some particular strength, "not quite as unsure of myself as I thought I was" or the feeling of satisfaction in having been of use in the Project.

- Tutors were most consistent in reporting that they learned to enjoy or feel capable in the area of teaching. Example: "I would like to do this some day on a full-time basis."

  Other responses to the area of teaching included: the difficulties or challenges in teaching "can be frustrating and difficult".

  Some aspects of the teaching process were mentioned: "Teaching must be adapted to the mature adult."

Although the number of respondents in the sample is small, a clear impression was given that the tutors had learned most about themselves, especially in regard to their enjoyment of teaching. This sort of personal meaningfulness seemed to be at the core of the tutors' participation, overriding in strength and consistency other bases for commitment and sustained effort.

G. Tutors' Societal Feelings, Opinions, Attitudes

Another question asked the tutors, in the study reported directly above, to describe how if at all their feelings, opinions or attitudes had changed about such subjects as society or social problems as a result of participating in the Project. Sixty percent of the respondents gave no answer to this question. Those who did reply praised the Project as a means of "helping", or referred to some Project efforts believed to be potentially helpful. A few stated that they now had greater "awareness". One tutor commented: "My opinions on these subjects were well developed before I tutored."

The rather general or tangential nature of most of the responses and the high rate of failure to answer, suggested that the Project engendered little if any conscious change in tutors' feelings, opinions, or attitudes towards society or social problems.*

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* The study of responses to this particular question was not borne out in interviews and informal addenda to written reports in which tutors volunteered that they themselves had found new interest in civic affairs and a greater understanding of social problems by viewing them with their students. They recounted how such activities as planning supplementary reading and searching for "student-interest" materials, coupled with hearing their students' reactions to the subject matter, made them "see things in a somewhat different light."

Some tutors had expressed resentment to the somewhat probing questionnaires, and it is possible that their high rate of failure to answer this final question was in part an expression of feelings toward the interrogation, rather than the lack of conscious change.

Inquiry was made as to whether or not tutors considered that participation in the Project had required any sacrifice on their part. Most of the tutors in this sample did not perceive of their participation as requiring sacrifices in their personal lives other than giving up some of their time or occasional social engagements. Among those who did consider that some personal sacrifices were made in order to tutor, there was no indication of resentment.

CHAPTER IX

THE TEACHING METHODS

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BACKGROUND

A provision of the original grant from the Office of Economic Opportunity to the Project required the trial of two teaching methods. One was a programmed method, Reading in High Gear, referred to in this report as the "RHG" method, designed and developed by Dr. Myron Woolman of the Institute of Educational Research, Washington, D. C.* The other was the system previously developed under the auspices of the Massachusetts Council for Public Schools, Inc., referred to as the "MCPS" method.

The pre-project design had envisioned comparison of these materials in use in a variety of ways, an objective which upon exploration seemed to be essentially incompatible, in several respects, with their optimal presentation for teaching purposes. As a consequence modifications were proposed and approved, permitting the use of both methods in circumstances more in keeping with their original schema. Thus presumably the possibility of greater success for each method was enhanced.

As the concept of a search for one best "all-purpose" reading method for teaching adult illiterates lost ground, analyses which focused on the strengths and weaknesses of each of these methods in actual practice became increasingly important.

Research emphasis was also progressively adjusted toward documenting factors which were in the early period of the program still unique to the Project, such as the recruitment, training and employment of volunteer tutors.

Because the two methods were disparate in so many respects besides the circumstances of their use, much of the comparative analyses proved to be inappropriate; and rigorous statistical treatment of the two methods was limited for the most part to comparison of the reading progress of students. This is reported in Chapters IV and V on the reading test results There it is apparent that there was little systematic difference between test results of students studying in each of the two methods. The more important aspects became: 1) the extent to which the Project's heterogeneous volunteering adult illiterate population did or did not show measured progress with either method; and 2) the rate of literacy achievement which is to be expected with such groups, if expectations are based on the experience in this Project.

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* Woolman, Myron, Reading in High Gear: The Accelerated Progressive Choice Reading Program. Science Research Associates, Inc., Chicago, 1964.

In this chapter some comparative analyses is presented regarding the structure of the two methods and the way they were received, as reported by the educational specialist and various center personnel. Also in this chapter are:

- Summary descriptions of each method and the conditions of its use.
- Information on the training of faculties.
- Observations of students' reactions to the methods.
- Evaluative comments from different sectors of the Project.
- Excerpts from analytical studies of the methods.
- Discussion of changes made as a result of experience.
- Delineation of major problems in teaching the Projects' students.
- Identification of students' needs which interfered with their learning.

As noted above, statistical analyses of the students' performances in the two methods are presented in Chapters IV and V on the reading test results.

I. SOURCES OF INFORMATION

Information and analyses presented in this chapter were drawn from varied sources including:

- Systematic interviews with teachers, supervisors, and volunteer tutors.

- Field observation by appropriate central staff members such as the Head Supervisor of the MCPS method, the educational specialist, the Associate for Operations, tester-counselors, educational and research consultants and others.

- Records such as tutor and student registration forms and questionnaires, student work diaries maintained by tutors, structured or informal weekly reports from supervisors and teachers, student progress reports from teachers and tutors, and special-purpose study reports.

II. READING IN HIGH GEAR METHOD

A. Summary Description of Materials and Procedures

Only a few promising published materials were available in quantity in 1965 which were suitable for use with functionally illiterate adults. Among these was Reading in High Gear, selected by the Office of Economic Opportunity for testing in several programs across the nation. This unified set of programmed materials is a highly structured linguistic program presented in a series of workbook exercises and drills which are divided into learning cycles and segments.

The following principles are basic to the method described by its author as a "progressive choice reading program":

- The alphabet is divided into similar and dissimilar letter shapes for maximum discriminability.
- Students learn the elements of similar letter shapes which are presented one at a time.
- Initially, only one letter sound is presented for each letter shape.
- Students are required first to understand orally the meaning of the words they will learn to read.

After the student demonstrates his understanding of how one letter shape and its elements differ from other letter shapes, and after he has related the letters' shapes to the letters' sounds successfully, the student is considered ready to "compound" the previously learned units into words. When the student can read those words which he already understands in speech, he has closed the gap between sound and symbol and has learned to read, according to the rationale of the method.

RHG is divided into three major cycles, which are further subdivided into segments, and are presented in a series of workbooks consisting of written and oral drills with pictures, puzzles and stories designed to move the student gradually through increasing levels of difficulty. Skills in capitalization, punctuation, grammar, cursive writing and dictionary usage are also introduced in the course of study.

Each student, regardless of previous knowledge or training, is required to begin in Cycle I, Segment I, of his own workbook and progress through each segment.

Acceleration procedures are provided for use with the students who master the segments rapidly. Check-out tests appearing at the end of each segment and cycle are the basis for deciding when the student is ready to proceed to the next step.

In short, RHG materials have been developed as a unit following a consistent set of principles, procedures and format, and are so designed that the learner is exposed to prescribed materials under conditions of maximum stability and simplicity.

In the first cycle, each letter is taught in upper case printed form only and has one sound only. Words there are composed of consonants and short vowels. In Cycle II all letters are taught in lower case printed form and the following are introduced for the first time: consistent letter combinations and blends, sound variations for some of the letters, some phonetic symbols, some grammar including capitalization and punctuation, and the alphabet as a sequence of letter names. In Cycle III words are taught regardless of their phonetic structure; and cursive writing and dictionary usage are presented.

Pictures are used systematically in the materials to establish whether or not the student understands, at the audial meaning level, such "goal words" as "MOM", "POP", and "MOP" in Cycle I, which he must learn before proceeding through exercises in identification and discrimination to the visual meaning level.

Stories are used in order to decrease the amount of time spent in developing the audial meaning of "goal words" and also to provide additional interest and stimulation.

On the assumption that the illiterate or beginning reader may be anti-social in attitude and behavior, story material ranges from descriptions of anti-social behavior and values in Cycle I, to stories of acceptable modes of behavior and societal goals in Cycle III, using a vocabulary assumed to be related to these levels. Slang in Cycle I changes to Standard English in Cycle III. Adaptations of literacy classics such as The Three Musketeers and Gulliver's Travels are included in the third cycle.

From the detailed rationale and instructions underlying the method, some other points which had either positive or negative implications of pertinence for this Project's student body were:

- All letters except "Q" are presented in Cycle I.
- The development of a cumulative reading vocabulary, emphasizing "goal" and "optional" words, moves with relative speed into four and five letter words.
- The learner participates actively, through the workbook exercises.
- Choices offered early in the workbook materials are programmed to give the student a high possibility of successful selections.
- With the checkout system errors are discovered as they occur.
- Instructions to teachers emphasize the need for their marked approval of students' correct responses.
- There is encouragement for the students to work independently.
- Beginning with Cycle II, advanced students may assist those in lower cycles for a part of each lesson period. Thus, according to the rationale of the system, the advanced student reinforces his own learning by teaching what he has learned, and the slower student is inspired by the possibility of becoming a student-assistant himself.

RHG was designed for use in a classroom group with one teacher. Instructions recommend that the student group be divided into subgroups according to rate of progress through the materials, with "slow" and "fast" learners being grouped separately and encouraged to work independently. The expected achievement for students is a minimum sixth grade reading level after completion of from 150-300 hours of instruction.

According to the method's literature, the system does not require professional teachers or previous teaching experience. The step-by-step instructions in the manual are designed to preclude such a requirement.

Immediately below, information about the RHG faculty in the Boston Project and about the RHG centers is presented. Following that, the preceding points regarding the method's rationale and procedures are discussed with regard to their actual applicability in this Project.

B. Use in the Boston Project

1. Faculty: Selection, Training and Responsibilities

In the Project the modified plan for the use of RHG called for the teaching in class groups of up to 25 students with one teacher and if necessary a clerical assistant. In addition, a part-time supervisor for all of the RHG centers was considered. The faculty with direct responsibility for use of RHG is described below.

Supervisor: A supervisory candidate was selected from the first group of RHG teacher-trainees, in consultation with the principal consultant in charge of the training course. Following a special two-day training session at the headquarters of the Institute of Educational Research, Inc. in Washington, D. C. this supervisor assumed his duties on the Boston Project. They included: the observation of teaching procedures, consultation with teachers regarding the work and individual problems, reporting to the central office on the use of the method in the centers and the students' attendance and progress. Later such supervision became the responsibility of the Project's Associate for Operations and a central educational assistant.

Teacher Training: To staff the centers, five major teacher training courses and a four-hour workshop were offered by the Project over the two grant periods. Three of these courses were conducted by special consultants recommended by the author of the materials from the Institute in Washington. A fourth was given by a reading specialist from New York State recommended by the publisher of the materials. Later two courses were provided by experienced personnel of the Project's RHG staff. At all of the training courses, other staff members participated in presenting appropriate orientation to other aspects of the Project as a whole.

Besides orientation to the Project, its scope and services, and its student population, the training series included: review of the author's rationale, practice in the student workbooks and practice teaching by the trainees, as well as discussion of the operational procedures necessary for successful teaching. Emphasis was placed on the importance of the "Instructor's Manual" with its detailed rationale and step-by-step instructions. Although the hours were scheduled differently, approximately the same amount of time was used in the major RHG training courses as was required for the training of MCPS tutors or supervisory replacements.

Experienced RHG teachers were invited to participate in all subsequent RHG training courses. In the second grant period they also attended in-service training sessions such as faculty meetings and seminars dealing with the general educational problems of the Project and of the Project's student population.

Teachers' Recruitment and Qualifications: All RHG teachers had B. A. degrees. Most were certified teachers in Massachusetts and some were teaching concurrently in elementary or secondary schools. They had been recruited originally through local school departments or university graduate schools. Later, replacements responded to advertisements or heard of the opportunities through friends already engaged in the Project.

Teachers' Responsibilities: In addition to the maintenance of class groups and the help for individual students, teachers' duties included: administration of the center, responsibility for reports of attendance and reading progress for central staff analyses, periodic follow-up of absent students, conferences with testers and other personnel regarding individual students, occasional interviewing and registration of new students, and later the supervision of work of a teaching assistant.*

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* The scope of these responsibilities should be viewed with respect to the length of time the centers were open each week--usually a maximum of four hours per week.

Volunteer Teaching Assistants: Originally in the larger centers volunteer clerical assistants were recruited and assigned after all teachers reported difficulty in teaching more than six or eight students alone. Volunteer assistants were selected and trained to assist with some of the teaching duties as well as the clerical tasks in centers where enrollment warranted.

For the most part these volunteers were also college graduates or were in the process of receiving B.A. degrees. Only a few had teaching certificates. The chief occupation of others represented an interesting diversity: a lawyer, housewives, seminary students, a public relations specialist, a metallurgist, a computer programmer, and a secretary.

Assistants' Responsibilities: Generally, the volunteer worked with new or slow students, sometimes on a one-to-one basis, so that the students might be brought to a level necessary to join the main group. The RHG workbook was the text, although occasionally in the latter part of the grant period the teacher recommended supplementary material for drill on a particular principle. In at least one instance, an experienced volunteer who had attended a major training course was described by the teacher as assuming on occasion similar responsibilities to his own. However, the assistant was only available one night per week.

2. RHG Centers

Reading in High Gear was used in seven different geographic locations in Greater Boston. The diverse settings included the employees' cafeteria of a major insurance company, a church meeting room, an apartment in a low income housing project, the offices of a local Office of Economic Opportunity employment center, the library of a tuberculosis sanitorium, the meeting rooms of a "golden age" group at another low income housing project, and one high school classroom.*

Three of these locations drew students from relatively small neighborhoods while, at the other four, students came as well from surrounding communities in which no opportunities for such study were available.

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* For specific locations of centers see Appendices, "Literacy Centers".

With one exception, the centers met twice a week for four hours of instruction per week. Facilities ranged from bright, air-conditioned, spacious surroundings, to noisy, poorly lighted rooms where ventilation was poor and space was at a premium. In three locations the RHG program and the MCPS method shared the facilities on the same nights but in separate rooms, and the students were aware that another reading program was being conducted simultaneously.

3. The Method in Practice

a. Positive Effects with Beginning Students

Certain aspects of RHG procedures or content were advantageous for some of the Project's students. Exemplary areas and their implications are discussed below.

Many of the students were fearful, lacking in self-confidence, unsure, anxious, easily discouraged, needful of some evidence of immediate progress in order to sustain motivation, relatively eager, but slow to become thoroughly involved or committed.

For these students certain elements of the RHG method were as encouraging and reinforcing as the rationale had predicted. One of these was the requirement, beginning in Cycle 1, of active participation on the part of the learner through the workbook exercises. Their high, built-in possibility of successful choice, did permit early, tangible evidence of achievement, especially for the total or near-total illiterate.

The provision for early discovery of errors through the checkout system, combined with the instructional emphasis on teacher's praise for correct work, also were used advantageously in this Project.

Those who were able to progress, however slowly, reported a sense of "getting some place" from the tangible evidence of the checkout system in their workbooks, and their accumulation of progress from segment to segment and eventually cycle to cycle.*

For uncertain students the uniformity of the approach and the consistent set of principles, procedures and format came to represent a kind of stability which was familiar and comforting.

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* An illustration of the importance of this evidence to students occurred when the locked storage cabinets of one of the centers were broken into and students' workbooks were stolen or destroyed. Students were visibly distressed and some repeated the work at home in order to have the record of their previous accomplishments.

The student assistant plan was another symbol of encouragement, both for those who had achieved the prescribed levels and for those who looked forward to being able to qualify.

For students who were able to work independently, the principle of encouragement to do so while still within range of the teachers' help was an important counter-balance to the natural dependence which often developed during the students' period in training.

With regard to content: the introduction in Cycle 1 of all letters except "Q" and the relatively early introduction of four and five letter words broadened the students' possibilities for word recognition and vocabulary building. Both of these aspects were important to adults with very low reading skills, many of whom were heartened by being able to recognize single words in a newspaper long before they could read phrases or sentences.

b. Effects with Advanced Students

In some respects the experience with the RHG method in this Project varied from the literature's prescriptions or predictions. Of pertinence are the effects for some other students of the points discussed directly above. The examples also illustrate the fallaciousness of expecting one reading method to work optimally with all adult students.

For more advanced students, being required to begin in Cycle 1 was demeaning. Although the procedures for accelerated check-out were followed, the progress through the segments was not sufficiently rapid to hold their interest or regular attendance, and many of them left the program.

Teachers and students reported that the uniformity of approach, which represented security for slower or beginning students, was boring for the more advanced and as a rule did not stimulate their concentrated attention. Many of these students were young men and women who were already inspired to continue their education, but whose reading skills did not permit their working at the level they aspired to. The repeated drill, the nonsense syllables and slang did not seem to them to be moving toward their objectives. In some cases their reading skills were developed irregularly and it was judged by faculty and advisors that they required more individually specialized programs than were possible through the tightly programmed RHG method.

Most of these students did not stay long enough to become student assistants. A few of those who did found the experience stimulating, and when they left the program reported being influenced in their future goals by the participation in this activity.

C. Maintenance of Working Groups

Repeated difficulty with one fundamental procedure of the RHG method was encountered. The establishment and continued maintenance of up to three student groups, working at varying levels within a single class did not appear to be generally feasible with the Project's student population.

Because of early difficulties in student recruitment, no one center ever began with a full complement of 25 students. Previous reports have described these difficulties and their resolution.* In only one center did enrollment grow to as many as 24 RHG students in attendance at any one time,** and even in this center a good deal of instruction necessarily took place individually while other students worked independently. It should be noted that in this center, there were a number of relatively advanced students.

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* See An Interim Report: The Adult Literacy Project, CAP Grant 593-D, The Massachusetts Council for Public Schools, Inc., Boston, November 1965; and The Adult Literacy Project, Volume II, The Massachusetts Council for Public Schools, Inc., Boston, November 1966.

** One center, which was the exception, had had a stable attendance of eight to twelve students for about six months. When a young, quietly enthusiastic woman replaced the retiring teacher, and her husband subsequently became a volunteer assistant, this center built comparatively rapidly to 24 students.

One difference in this class group was the comparative homogeneity of its student body--almost completely a group of currently motivated young men who had been special class students or dropouts. Their attendance in the Project remained relatively regular and they were observed to work purposefully and with apparent pleasure under the direction of the young couple. Even with the random assignment policy, no other center in the Project--of either method--ever happened to accumulate such a homogeneous group of any one age level, or to hold such a uniformly stable population for a period of months.

The Project's policy of accepting and referring voluntary students to centers of each method as quickly as possible after they applied was in some ways a complicating factor for RHG teachers. One procedure suggested by the author for introducing students to RHG materials, was to enroll five students at a time, guiding them through the cycles to the point where they could work as student-assistants before introducing another five to the class group. Thus presumably the teachers' task could be lightened to some extent.

However, the Project's experience was that when students' enrollment was deferred for a period, they tended not to appear at admission time. Further, the heterogeneous population varied too much in range of entering levels and differing rates of speed in learning specific skills,for students to be able to progress together in groups of five in any case. Since much more individual help was required in the introductory stages, the continuing-enrollment plan, which usually resulted in new students entering one or two at a time, was preferable to receiving many new students all at once,despite the fact that teachers were then required to be focusing on help for the newcomers and alternately assisting members already attending.

Because one factor in favor of the programmed materials was the possibility of one teacher influencing the learning of many students at once, repeated efforts were made to use the group levels approach effectively. It was stressed in each teacher training course, along with illustrations of ways to involve students in group discussion while alternate groups worked independently.

The RHG training experts did not see continuing enrollment as a hindrance in the use of the group method; and they advocated flexible regrouping where students who were not progressing rapidly could be taught with new students as they entered. However, teachers' efforts along these lines were only temporarily successful, although some of them used considerable inventiveness in their efforts to comply with instructions.* Eventually in almost every class, the bulk of the teaching came to be carried out with the teacher working briefly with students individually, in rotation.

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* One resourceful teaching assistant made a vital group experience by carrying out dictation exercises with as many as five students at once even when they were working on different assignments.

In centers where enrollment was not heavy and students were capable of working alone, this procedure was relatively effective. But with larger enrollments, even with teaching assistants, sufficient individual attention for each student was more problematic. In any case less concerted group interaction took place than training representatives had advocated, and observers reported seeing some students who could not work alone, who merely waited their next turn while the instructors completed their rounds.

The experience from which RHG teaching consultants had generalized regarding the feasibility of the group approach was largely at secondary school levels in regular classroom situations. Such groups were comparatively homogeneous in many respects; whereas the student population of the Project was heterogeneous to a much greater extent. This difference may in part account for the difficulty which six out of eight RHG instructors described in maintaining any kind of group teaching.

In excerpts from the faculty's critique of the RHG method reported below, this and other difficulties are commented on.

D. Faculty Reports

Structured interviews were conducted with eight RHG faculty members as a part of the study of the method in practice in this project. Some of their remarks dealt with subjects already discussed above and others pinpointed aspects discussed below for the first time. Their comments are interesting for the insights they permit regarding the teachers' personal approach and involvement in the work, as well as for the information regarding the students' reaction to the method.

Faculty Enthusiasm: All RHG faculty members began their teaching with considerable enthusiasm for the method and confidence in its workability in a group situation. However, only one of the eight interviewed remained markedly enthusiastic about RHG for the Project's student population. Only two considered that they could teach the method, alone, to a group of any size. The one instructor commented:

> "I feel strongly about how good RHG is. It has many things other programs just don't have. It seems to be more suited to the people I have been working with than any other reading material."

Group Teaching Possibilities: Two teachers commented positively.

> "Personal attention is very important and is possible with a group of three to six students. RHG has all kinds of flexibility with a small number of students, six to eight, maximum."

> "They told me a teacher could handle up to a class of 25. I couldn't have handled that many. Twelve to 14 was okay, an average of 8 to 10 was best of all for the way I liked to teach. I could handle 12 without needing help, but I'd be kept moving around."

Five instructors had become convinced that the teaching was only possible on a one-to-one basis. One of these commented:

> "I treat students on a one-to-one basis because all are on different levels. With homogeneous groups maybe you could pace it 'to keep everyone' happy. But not with the groups we get."

Three explained that student dependence was an additional factor calling for individual teaching.

> "Most have to have the crutch of the teacher. They have to have some authoritarian figure."

> "Students need emotional momentum and support to move on."

> "Informality of teaching on an individual basis is good. It eliminates the uneasiness, doesn't put the student on the spot. One student is not singled out as having less education than the next."

Strengths of RHG were described by faculty members, other than the one initially quoted in this section, in the following ways:

> "A tightly knit program".

> "A program constructed so a student can find success through a small number of steps".

> "This is the first program that has held the student's attention because he always feels that he is learning something".
>
> "After a point, it is reasonably self-directing. Students can work with a minimum of supervision".
>
> "A person can achieve some measure of success by assuming some position of leadership."

Use of Student Assistants drew slightly mixed comments:

> "(Students) feel good when another student accepts them. Gain confidence, move out of their shell."
>
> "In RHG he can ask a fellow student. The asker is relying on a fellow student who is more advanced than he. The student who is giving advice gets a sense of pride."
>
> "I use student help as a survival mechanism!-- and find numerous goods of a social order associated with it."
>
> "All had real understanding and regard for one another. Self-confidence grew. It's the first time students met with success with people they understand. Their ideas and thoughts had worth. They did not get laughed at. They were made aware that they had something to offer.
>
> "Its a type of recognition they have not experienced before."

Two teachers less enthusiastic about the procedure commented:

> "They (students) get so much satisfaction out of helping someone that they do not do their own work which is not as emotionally gratifying."
>
> "In some cases students, when asked, were reluctant to assume the role of helper."

Weaknesses of RHG*: All of the instructional staff interviewed, pointed to some weaknesses and drawbacks of

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* Subsequent to these interviews a revised edition of Reading in High Gear was published which was to take into account these types of criticisms.

RHG in use in this project for adults. They objected to having to start each student in Cycle I, Segment I when some students already had some reading ability.

Four teachers felt that the delay in the presentation of the alphabet until Cycle II was unwarranted and troublesome. Typical statements were:

> "For the total illiterate it is easier but the one who knows the alphabet has more trouble, has to unlearn...Makes for added confusion."

Two commented that the names of letters were insignificant and the treatment of the alphabet in the method was good.

The use of nonsense syllables and of slang in the selection of reading materials, and the limited writing instruction were other elements criticized by teachers. Typical comments included:

> "We originally thought the nonsense syllables were excellent but most students have difficulty. Nonsense syllables slow the student down and are confusing. Having peg word (meaningful word) to attach nonsense syllables to might make it easier for students."
>
> "There is a limit to the usefulness of nonsense syllables. Students get a little sick of it. Certainly there is nothing to discuss about nonsense syllables."
>
> "The ' bopper language' or 'hippie talk' is not familiar to most of the students. They have trouble understanding the slang and are bothered by it."
>
> "Students have to learn two kinds of vocabulary--the slang and the other."
>
> "The excerpts from Gulliver's Travels and The Last of the Mohicans were even further removed from the lives of the students and seemed to make no sense to them. Besides they are quite difficult in terms of vocabulary."
>
> "In RHG, they (students) never write a sentence, they only write (single) words."

Inflexibility: The repetitive format of the materials, which was found to be an asset for many students was described by some teachers as too highly patterned, too elaborate and inflexible.

> "After a year, one would welcome a varied approach".*
>
> "Most students were bored because of the routine after they caught on to the system"

Lack of Transfer: In this voluntary program where very practical circumstances sometimes forced students to leave training for periods of varying lengths, the transfer problem was of special pertinence. Further, the tight programming did not permit transfer with ease to another type of training if students won the opportunity to participate in broader vocational or educational study either along with, or in lieu of, their training in the Project.

> "People who leave the program would have to be taught all over again--probably retain little of RHG."

Teachers were frustrated by the rigidity of a system which they felt did not take into account the background, experiences and needs of their students.

For example, the checkout tests which had some distinct advantages, posed difficult dilemmas for the teachers when students repeatedly were unable to complete them with the standards of performance required. Teachers were faced then with the students' deepening discouragement and possible drop out or with disregarding instructions and moving students on without proper evidence of acquired mastery.

> "If you were to stick to the instructor's part of the manual...that the student should perform at 100% in every case, the student would be there forever."

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* Pertinence of this comment is more apparent with a review of the varied spread of time required by different RHG students to complete the materials.

In April, 1968 a study of the group of 16 students from five different centers, who had completed the RHG materials, revealed that they had required a span of from 6 to 28 months of attendance in the Project to achieve this goal. The span in hours for completion by these same students was 32 to 242 hours. Sixty-three percent of these were from the center taught by a couple, which was described in a footnote on page IX-11. Three students in the latter group had dropped out and then returned to complete their work in an overall time span of both months and hours which was still less than the arithmetic average for the total group.

More serious criticisms centered around the fact that many students did not progress as the literature predicted and that attending faithfully and completing the exercises did not guarantee success. Students were reported as reading slowly from a workbook but being unable to connect an exercise with its application to learning situations. They seemed "unable to conceptualize on an abstract level," as one instructor put it. Some others were not able to read at all.*

> "They have learned the exercises and the symbol system but have just not learned how to read. Somehow all the skills do not coalesce into reading... We expect them to have the highly developed abstract--which we have. They do not. They are used to object associations."

> "Not a student I have had through Cycle II can pick up a newspaper and read it."

Statements such as the one below by a student who had completed all the exercises, confirmed teachers' criticism.

> "I can do everything but read this book."

The prediction that a sixth grade reading level was attainable in 150 to 300 hours with the RHG method held true for some of the Project's students, but not for all.

Supplementary Materials: Original instructions in the use of the RHG method by the Project were that materials were to be used "purely" as directed in the manual, without the introduction of any other reading matter. Eventually teachers, concerned by their students' rate of progress, introduced some supplementary materials in the hope of more closely meeting the needs of their students.

These materials included: newspapers, magazines, special editions for minimally skilled adults, crossword puzzle books, comic books, grade school texts. They reported using the materials for drill in the classroom, as a break from the routine exercises, for practice in reading, or for homework assignments with the teacher checking them out at the next lesson period. Instances were reported also of students bringing reading material which was of importance to them.

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* It is important that it be recognized that in this chapter no attempt is made to delineate the cause of some students' lack of success in learning to read with the RHG method. The extent to which this lack is attributable to students' natural endowments or disabilities, rather than the method of instruction, is not considered here. Chapters IV, V and VI throw some light on this subject.

Later in the Project, an attempt was made to provide supplementary materials in a uniform way for all students in the Project. These were selected with consideration for the needs and interests of the students. Under the direction of an educational specialist working with a central staff assistant, "interest kits" were organized according to subject matter containing material of differing levels of difficulty on each subject. However, with the tightly programmed method these were useable for the most part, only as free-time reading matter and could not be woven in to reinforce the students' current segment assignments meaningfully.

III. THE MASSACHUSETTS COUNCIL FOR PUBLIC SCHOOLS SYSTEM

A. Summary Description of Rationale and Procedures

The other approach to literacy training used by the Project featured individual tutoring by trained volunteers. This system, developed under the aegis of the Massachusetts Council for Public Schools prior to the initiation of the original OEO grant is identified in this report as the "MCPS" method.

Basic premises underlying this method are:

- That reading is a coding and decoding process.
- That a personal approach is vital in the instruction of the adult illiterate.
- That a one-to-one relationship of student to tutor is necessary since it permits flexibility, consistency and personal attention in relation to the specific instructional needs of the individual student.
- That non-professional volunteers can be recruited and trained for tutoring under the guidance of a professional supervisor, thus extending the services of the professional teacher.

- That the necessary coding-decoding skills can be taught to adults most successfully through a structured alphabetic-phonetic-linguistic approach using a combination of auditory, visual and kinesthetic stimuli and a variety of materials.

Basic materials for the instruction during the OEO Project periods included:

Gillingham, Anna, Phonetic Drill Cards for Remedial Reading and Spelling (Green Seventh Edition), Educators Publishing Service, Inc., Cambridge, Massachusetts.

Bloomfield, Leonard and Barnhart, Clarence, Let's Read, Vol. 1-9; C. L. Barnhart, Inc., Bronxville, New York, 1963.

Plunkett, Mildred B., and Peck, Caroline Z., A Spelling Workbook for Early Primary Corrective Work, (Books I, II) Educators Publishing Service, Cambridge, Massachusetts, 1960.

Grush, Helen, Teacher Instructional Materials, Teacher's Manual and Student Workbook, developed for the Adult Literacy Project, Massachusetts Council for Public Schools, Inc., Boston, Massachusetts, 1964.

A selection of other materials were available in the reading centers for meeting specific skill needs of individual students.*

Until the student attained functional mastery of the coding-decoding skills, primary emphasis was given to their development. The basic instructional procedure was patterned in three sequential steps in each reading session:**

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* A more extensive list of the materials used in the MCPS program appears in Appendix J. It includes those published by others and those developed by MCPS supervisors and tutors for delineating the method or enhancing specific aspects of it.

** In Appendix J samples are presented from the "MCPS Procedures Manual Outline" to illustrate how the principles described in this chapter are carried out in the students' initial visit to a literacy center and in typical tutoring sessions.

- Rigorous study and review of the Gillingham phonogram cards to develop skills for the mastery of the coding and decoding process.
- Oral reading of patterned reading material, correlated with the phonogram drills and containing the most common and consistent patterns of English word forms as presented in the Bloomfield Barnhart series.
- Writing of words and sentences, dictated from the readings and repeated by the student as he wrote, thus reinforcing the reading lesson through use of the three basic stimuli: visual, auditory and kinesthetic.

Once coding and decoding were mastered instruction broadened in scope to include: training in alphabetic order and related skills such as use of the dictionary; handwriting skills, listening and reading comprehension skills, vocabulary extension, phrasing, grammar, punctuation and communication skills such as composition and dialogue.

An integral part of the program was the development of applied literacy skills. As the need arose the students were assisted in using their developing skills to solve practical problems such as reading street signs, filling out job application forms, or mastering the driver's manual. Scope, depth and kinds of application of these experiences depended on the students' readiness, needs and interests.

A simple literacy levels test had been developed to establish students' ability to identify letters and digits and their sounds. Students were classified as pre-literate, beginning or advanced literate on this basis. Even so, the usual practice was to start students in Level One, checking them through to insure that no step in phonetic training would prove to have been a stumbling block.

In addition to the original screening test, the system had little prescribed testing for progress. Informal tests centering around the materials in use were sometimes designed by teaching staff members.

A recording practice developed before the OEO grants was the diary, kept in the centers for each student by his tutor. These booklets served several purposes. Ideally,

- They provided permanent records of the development of students' skills and the specific techniques and materials used in the process.

- They served as guides for new or substitute tutors or for alternates where tutors could volunteer only one evening per week.

- They constituted tangible evidence of progress to be shared with concerned students.

- They were planning aids for tutors, supervisors, and central staff educational and research analysts.

The diaries contained pertinent information regarding the instruction in each session along with a tentative lesson plan for the ensuing session and periodic notes of supervisor's observations or recommendations.

In brief summary, the MCPS system as employed in the Project was an eclectic approach to literacy training for adults, bringing together a variety of published materials, supported by teaching manuals, worksheets, and other aids developed by the supervisory and tutorial staff, combined in a loosely knit and flexible structure.

Information about the MCPS faculty and centers is presented below. Following that, the two reading methods are viewed for similarities and differences demonstrated in excerpts of comparative analyses by an educational specialist. In the previous chapter general information about the volunteer tutor group has been presented. Here below, the focus regarding tutors' is on their training, and on the duties of those who supervise the tutors' work.

B. Use in the Office of Economic Opportunity Project

1. Faculty: Selection, Training and Responsibilities

Faculty for the MCPS centers was planned to include: a Head Supervisor, two paid supervisors for each literacy center and a volunteer tutor for each student.

Supervisors' Previous Training and Qualifications: Most of the supervisory personnel on the original OEO project had participated in the early development of the Massachusetts Council's first adult literacy program. Some had tutored and subsequently studied in an eight week course for supervisors in the Summer of 1964. With the expansion for the new projects, some qualified tutors became supervisors, and a considerable core of experienced tutors continued to serve. Supervisory replacements in the two grant periods were drawn from tutor ranks for the most part, and were given special training in small groups. All supervisors had B.A. degrees and most had M.A. degrees in Education.

Supervisors' Responsibilities: Their major responsibilities evolved around the local administration of the center. Included were assignments of student-tutor working partnerships, reading consultations, in-service training for tutors in collaboration with the Head Supervisor, record keeping, reporting for central administrative and research purposes, some interviews with entering students and some literacy skills testing.

Extra-curricular tasks involved maintaining contact with absentee students or tutors. Some supervisors developed supplementary materials, or organized center news sheets and social functions to which both students and tutors contributed. Some assumed an active part in Project relationships with the local community, and secured other services or educational opportunities for students.

All responsibilities were shared equally in certain centers, while in others each supervisor specialized in one functional area: either the administrative activities of the center, or reading consultations and other educational activities.

The amount of enthusiasm, the interest, personal attitudes and warmth of the supervisors, all have been seen as decisive influences on the general atmosphere of each center.

Head Supervisor: Qualifications for this post have been comparable to those of supervisors; and the previous experience in the MCPS program, of the two people who have held this position, was extensive. Principle responsibilities revolved around the training of tutors and supervisors and consulting visits to the centers. Training programs are described below in greater detail. Center visits required observation of tutor-student pairs, representative reading diagnosis in consultations with tutors and supervisors, periodic workshop meetings with supervisors and in-service training for tutors. Other activities included some preparation or revision of MCPS instructional materials for the students, as well as continuing development and refinement of the MCPS training courses for tutors.

The Head Supervisor's responsibilities for central office and MCPS center liaison were shared with others whose bailiwicks included centers of both teaching methods. Among these were the educational specialist, the Project's Associate for Operations, and the Field Tester-counselors. Essentially the Head Supervisor's responsibility was focused on educational aspects of the MCPS system.

The Volunteer Tutors' Responsibilities: In the previous chapter general information appears about the recruitment and screening characteristics, attitudes and reactions of the volunteer tutor group. Tutors' responsibilities in the Project consisted of: participation in five initial training sessions; attendance in a center preferably two nights per week; responsibility for one student's reading instruction using the help and advice of supervisors and occasionally of other consultants; individualized preparation of lesson plans; maintenance of a positive learning climate for the student; cognizance of the student's interests for application to his vocabulary training, supplementary reading choices, and aid in applied literacy development.

Tutors' Training: The main training event for tutors has been "The Tutorial" which was the volunteers' initiation to the Project. Upon its completion training continued as tutors worked under close supervision of the professional center-supervisors. Periodic in-service training was provided for center groups thereafter to up grade skills and allow for discussion of common problems.

2. The Tutorial

The goal of the Tutorial has been to provide orientation to the Project and basic training for tutoring in the shortest possible time to volunteers who came with widely varied backgrounds, educational experience and aptitude for teaching. In the 19 major tutorials held during the OEO grant periods, variations have occurred and continuing development has taken place. However, the program described below has remained as the essential structure.

In the first of five sessions tutors filled out forms describing previous experience, and questionnaires establishing pre-project attitudes and expectations they had regarding the Project, tutoring and adult illiterates in general.

"Kits for Tutors" were distributed containing about thirty basic items--articles, texts and worksheets--some of which are included in the lists in Appendix J.

Orientation to the Project presented at this session included:

- Background and aims of the Project; reasons for its co-sponsorship by the Office of Economic Opportunity; scope of the research in process and its relevance from an action-research viewpoint, to the nation's problems in adult illiteracy as well as the Boston students' problems.
- A composite description of the adult illiterate, built from experience with those in the Project and including feelings and experiences reported by them about their handicap.

At some tutorials taped interviews with students were used to permit trainees to hear in the students' own voices:

- What the opportunity to learn meant to them.
- What was most important to them about their tutors' participation in the program, such as regular attendance, promptness, or willingness to help.

Instruction in tutoring began with a brief history of the English language, its structure and patterns, a discussion of the alphabet, and its components--the vowels and consonants; discussion of the Gillingham phonogram cards and a practice period.

A second session was devoted to study of the fundamentals of visual discrimination, including the "b-d" and "g-p-q" confusions which were typical problems for the adult illiterate students. Methods for teaching the "beginning literate" were presented along with study of the appropriate materials.

The third session was devoted to auditory discrimination problems and techniques for their correction. Procedures for teaching spelling were also discussed, as were techniques for teaching advanced students.

The fourth session usually consisted of observation in a center providing tutors with the opportunity to become familiar with the organization of the reading center and to observe a student-tutor pair at work. This session was to serve two purposes: 1) to allay tutors' anxieties regarding their inadequacy, allowing them to become familiar with center routine in advance of tutoring, and 2) to raise questions where further clarification was required in the training.

These questions were discussed in the fifth training period, which also included a demonstration of teaching aids, a discussion of the use of supplementary materials, and a review of all the techniques, materials and procedures presented earlier.

In this session further "sensitivity" training reminded tutors of the importance of their attitudes toward such areas as the testing necessary for research, and the students' rate of progress: areas in which students' performance could be strongly influenced through feelings expressed by their tutors.

3. MCPS Centers

MCPS centers were located in ten different geographical areas of metropolitan Boston. Four centers were located in churches, one in a day-care center, one in a low income housing project, one in a high school cafeteria, and one in the employees' cafeteria in the Prudential Tower Building.

The range of conditions in the MCPS facilities, also donated by cooperating local organizations was similar to that which prevailed in the RHG centers. (See page IX-9.) However with the tutor-student pairs rather than a class group some quarters were more crowded, and occasionally partners were found working in such spots as the building stairway.

MCPS Centers met on the same time schedule as did RHG.

4. The System in Practice

a. Educational Analyses: Basic Materials

Some highlights of the MCPS System in practice can be seen through the following excerpts from comparative analyses of the two sets of materials most of which were the work of the educational specialist. Other information coordinated here came from structured interviews, questionnaires and reports originated by faculty, other personnel or students.

The basic text used in the MCPS system, which offered sequential progression such as that in RHG, was the Bloomfield-Barnhart Let's Read series.

Similarities in "the Bloomfield" and RHG texts are discussed below:

- Both use phonetically consistent words in the beginning exercises--one sound only for each vowel--to reduce the probability of error in decoding and to simplify the learning process.
- Both are linguistic systems of teaching. However, the Gillingham cards, which were designed for alphabetical phonetic training served that purpose in MCPS as well.
- Both the Bloomfield-Barnhart and RHG materials attempt to present letters and letter combinations in a systematic fashion so as to facilitate learning and retention; but there are marked differences in the choice of individual letters, their order of presentation and the patterns in which they are combined in the two systems.
- Both require a considerable amount of drill in the beginning text. For example: Let's Read, Volume 1, covers 13 consonants used as ending sounds and 17 as beginning sounds in combination with the vowel "a" (as in cat) to form over 97 different monosyllables arranged in families according to their ending sounds. From single three letter words the student progresses into phrases and sentences such as: "A rat ran. A man ran a tan van"...
- Both employ nonsense syllables.

- Both stress prescribed pronunciation in the oral drill in connection with the basic materials, to prevent later confusion as sounds are blended.

Contrasts in the two methods are also evident-- in the discussions below. For example: several apparent assumptions in the Bloomfield-Barnhart series were not appropriate with regard to many MCPS students. They are: 1) that students will be familiar with the alphabet; 2) that the student can learn to decode and blend a fairly wide range of consonant sounds rather quickly when those consonants are presented in association with a controlled vowel sound; 3) that the student will have no difficulty in differentiating between consonants closely related in shape; 4) that the adult student will tolerate and not be frustrated by the jingle-like patterns of consonant-vowel-consonant combinations used in the earlier books.

In contrast RHG does not assume that the student is familiar with the alphabet or that he will be able to master quickly the consonant letter symbols through their frequent association with a known vowel sound. In fact, care is taken in RHG that the student does not depend on such associational patterns for clues to the sounds of individual letters. Instead he is required to go through meticulous exercises designed to give him practice in discrimination of the elements of given letter shapes and the identification of the shapes with appropriate letter-sounds.

In Bloomfield-Barnhart upper and lower case letters are introduced at once beginning with the first page. In RHG only upper case letters are used in the initial segments, thereby limiting the number of visual shapes to be decoded to more distinctive capitals with lower demands on skill.

In Bloomfield-Barnhart no pictorial clues are given but text is limited on early pages to focus attention on the written symbols of the English language as a code. In RHG pictures are used systematically to establish whether or not students have verbal understanding of the terms they are learning to read.

In Bloomfield-Barnhart confusable letter-shapes are introduced in relatively quick succession. In RHG the confusable letter-shapes are introduced over a wider span as may be seen from the following table.

TABLE 109

COMPARATIVE SEQUENTIAL PRESENTATION OF CONFUSABLE LETTERS IN BASIC MATERIALS

Letters	Bloomfield-Barnhart Let's Read	RHG
m, n	Both in Book 1 four pages apart.	m in Cycle I, Segment 1 n in Cycle I, Segment 6
b, d, p, h	All within the first 21 pages of Book 1	p in Segment 1 d in Segment 4 b in Segment 5 h in Segment 5

These differences in presentation are pertinent, since this kind of discrimination was a frequently reported difficulty among the Project's students.

The size and structure of the initial vocabularies also contrast sharply in the two methods. In the early Bloomfield readers the short staccato sequence of two and three-letter words persists.* In contrast RHG, with the aim of increasing students' motivation by demonstrating how learned letters can be combined to form words which students already understand from common speech, introduces four and five letter words.

Another contrast: all students in each method were to begin virtually at the same starting point. However, there was some leeway for moving MCPS students farther into the materials initially, depending on their demonstrated reading level on the simple literacy skills test at the time of admission. This flexibility seemed to permit more adequate meeting of the individual needs of advanced students than were possible in the RHG method.

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* The effects of this limitation for the mature adult student in MCPS are illustrated in the following diary entry.

> "Mr. W. challenged me (the tutor) to give him any words at the end of Bloomfield 2, to write. He performed OK. He was most eager to move on to Bloomfield 3, so we changed books and read pages 9-19, but not fluently, Also read newspaper. Mr. W. is disappointed that Bloomfield 3 contains three letter words. He enjoys the few six-letter words like 'pig-pen'."

b. Faculty Comments: Basic Materials

Some of the same effects with beginning students, described on page IX-9 with regard to the RHG materials, were observed with the MCPS students in the use of the basic Bloomfield-Barnhart series and the Gillingham cards. Both materials seemed to provide security in the sequential approach and repetitive routine.

Opinions expressed by MCPS supervisors on the adequacy of the basic materials seemed to fall into two pedagogically distinct groups:

- Those who attached great value to structure, skill development through rules, phonetic analysis, practice and drill, as learning areas to be mastered before aiming at comprehension or reading for meaning.
- Those who attached importance to the content of reading materials, as a way of holding the interest and maintaining the motivation of students.

Typical of the uniformly positive comments of the first group were:

> "New students and new tutors as well feel a great deal of security in Bloomfield. It offers something tangible, a basic structure to go to.
>
> "Bloomfield is excellent for those who need it--the beginning student in particular. You can't get away from having this kind of presentation. Even if students groan and moan they still need it."

Comments from the second group pointed out negative factors as in the representative ones below:

> "Bloomfield is not enough fun. Some get bored with Book 1. Book 4 on is a drag."
>
> "Bloomfield places too much emphasis on skills and nonsense syllables."
>
> "Too much emphasis on getting the sound 'pure'. Doesn't benefit all students. They learn to read in spite of it."

Variations in the use of the Let's Read series were reported, with some tutors and some centers employing the texts very little, or only with beginning students, or for drill in selected problem areas for all students.

In the summer of 1968 a series of supervisory meetings were held with all active supervisors for review and assessment of the program in operation. Despite their previous outspoken criticisms, the supervisors agreed unanimously that the Bloomfield-Barnhart series was useful. No supervisor requested or recommended change to any other basic material although about one-third requested alternate basic methods for use with students who did not progress satisfactorily.

In one study in which supervisors were interviewed individually, no one endorsed the entire set of material in the "MCPS package", or endorsed the major part of it enthusiastically without qualification. Also, there were marked differences in the rating of individual items.

With regard to the other basic materials, it was reported that the Gillingham cards were used faithfully at first by tutors, in part because they felt secure in their use. However, difficulties were encountered in getting students--and sometimes tutors--to sound out the letters because of their embarrassment in the activity. Some centers reported the cards not being used often.

Comments regarding the Grush Manual and Workbook centered around the need for improvement and revision, and the content's "being too full of rules" which the student, having difficulty with the abstract, could not grasp or retain in practice. Others rated the manual as "excellent" or "used by three out of six tutors at the center".

The only item among the materials used in the MCPS centers on which there was unanimously favorable opinion was a supplementary reading material: News for You, Laubach Literacy, Inc. Editions A and B, Syracuse, New York. "Student interest in 'News for You' is generally very high and they struggle to read the smallest article."

C. Tutors' Reports: Effects with Students

A study of 140 diaries from nine MCPS centers revealed a large number of entries indicating that students found the heavy emphasis on pure sound and skill development, and on rules and phonetic drill, which occupied the major part of the teaching time, frustrating and extremely tiring. Notations such as the following indicated that the teaching method itself might be too exacting or unsuitable in these respects for a sizeable percentage of the adult population.

> "Student worked exceedingly hard on vowel exercises and was exhausted the rest of the evening."
>
> "Became tired after about 60 minutes of drill."
>
> "Seems restless and very easily tired. This whole thing appears a task for him. It is hard to keep up his interest and have him enjoy the drill end of it. He is very keen on his car book but has difficulty."

The use of nonsense syllables was described as: demeaning, confusing, and against the students' need for practicality and applicability in their study. For example:

> "Mr. J. really wants to get to reading. He does well on sentences (got to page 49) and dictation, but has difficulty with nonsense words. He read through lesson 13 of Bloomfield reader. Student gets impatient and confused."

Emphasis on pronunciation was commented on as "disturbing", "distracting", "a source of embarrassment", and a "hang up". Some students were described as feeling they would never progress to more meaningful activities and "real reading". An example of the distracting effect, and of the tutors almost cajoling efforts to coax the student into learning, appears in the quotation below from the MCPS center housed at night in a children's day-care center.

> "Tonight R. and I worked on the pronunciation of sounds. He is going to do some cartoons which will help him associate the letters with the sounds. He got restless and started to fool around with the toys in the playroom. We worked some puzzles together and then he finally started looking at the baby books. He read 'The Baby Animal Book' mockingly and then went on to 'Make Way for Ducklings'. When he relaxed, he started to read seriously."

Once the basic phonetic skills had been developed, tutors had leeway to relate a variety of supplementary materials to the students specific needs and interests.

Supervisors reported: "The selected supplementary materials are the basis. Later the tutor branches out." Criticisms regarding the early supplementary offerings centered on their content. Most of the materials demanding least reading skills were judged to be too immature for the adult reader, and those with more mature content were judged to be too demanding in reading skills for many of the students.

In general tutors did not abuse the somewhat open-ended format of the MCPS system. As a change of pace or to reinforce a point or cope with a specific problem, they introduced flashcards, word or letter games or teaching aids which they had found successful elsewhere.* Supplementary materials which they brought included ethnic biographies, books on American history or space programs and pamphlets with subjects of practical interest such as: driving, job search, consumer education or homemaking. Many tutors used these additional materials as "frosting" toward the end of the two hour session however, rather than as an intrinsic part of the teaching program.

Diaries indicated that topics covered a wide range. The amount of time spent on such enrichment and the manner in which it was carried out was difficult to determine, although research efforts were made in this direction. The following excerpts from diaries illustrate a growing trend in the MCPS method toward broadening of classroom tutoring to encompass situations and needs from everyday life.

> "Did some reading from My Country, on taxes. Discussed taxes and how to file tax statements, etc."
>
> "Dictionary work--looking up words particularly connected with electricity (student attends radio and electronics school)."
>
> "Inasmuch as T. is considering filing as a starting job, we did some filing. I jumbled cards and had her alphabetize them. As she is going to start training program on a key punch machine, we worked on fundamentals of arithmetic too."

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* Several tutorial and center workshop demonstrations were held to acquaint volunteers with simple teaching aids available and with others which could be constructed by the tutor for reinforcement of students' skills.

> "I am trying to determine whether she could get a job as a saleslady on the basis of tonight's session. I would guess that with a suitable training session, she would do well in a selling job which minimized the writing and spelling aspects but maximized numerical work."
>
> "Tonight we tried to evaluate the advantages of joining the RCA record club, calculating average cost of records, amount of required purchases and choice of records. Student did well and I think this kind of analyzing experience is good occasionally."
>
> "Talked a lot of philosophy and religion--for instance how does a person know right from wrong."
>
> "Drilled away on words he will be using in restaurant work. He missed very few and all he missed were words with double vowels like bread and wheat. Day of days! He spelled 'refrigerator' correctly the first time out!"
>
> "Started to read from a paperback _You and Your Senses_ the section on vision. B's assignment next Tuesday is to read as much as he can of the section on the construction of the eye. I am using this book because of his interest in science."

As part of their effort to develop applied literacy skills, MCPS tutors encouraged students to bring in materials which they were interested in reading.* Students were proud of their selections many of which were newspaper clippings.

One student's varied selection included: a jury summons, an invitation to a party, and a notice from his dentist: all of which he was by then able to read with a little help.

As students were able to use their reading skills to unlock content, their interest and excitement over learning grew. The following entries are representative of: 1) this developmental stage in reading; 2) the needs of advancing and mature adult students; and 3) the kind of individual tailoring of lessons which can take place with the MCPS method.

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* In Appendix J, page J-7 is a list of Applied Literacy Skills developed from experience in the centers regarding skills with which students needed help.

> "S. feels satisfaction in doing hard work, reading. Very excited about content because he learned something he had not noticed before, i.e. oil comes from the cotton seed which is used in making linoleum and candles, also feed for cattle from crushed seeds. Student is all enthusiasm. He works very diligently and has a great deal of initiative and drive. He likes variety -- this helps build morale and enthusiasm and helps fight boredom and discouragement. I have found him to be a zealous student, eager to begin lessons each night."

> "Mr. P. read two paragraphs from his copy of Profiles in Courage. It is a bit advanced for him, but I don't want to kill his interest -- it was his idea and he really wants to read it. It is hard going, but presents Mr. P. with a challenge."

> "Mr. F. read story about Birds Eye Frozen Foods; to both our joy and amazement, he was great! Didn't accomplish much else tonight, but this was really morale building. Took book home." Following a similar session: "I just can't get over how well Mr. F. is doing -- the method really works!"

> "Mr. M. wanted to read and discuss Civics for Americans. He spent an entire evening on the Bill of Rights. It was done at the student's request. I feel he enjoyed this lesson and it was quite a change from the usual routine."

d. Experiments in Group Tutoring

Faculty members from the early MCPS program were convinced that the only suitable ratio for teaching adult illiterates was one tutor to one student. Initially, sufficient resistance to planned group teaching was expressed that it seemed likely to influence adversely any systematic experimentation of the possibilities.

Desirable aspects of group tutoring in such programs were recognized, however, as being: the possibility of reaching more students with one tutor; the greater independence of students in the learning situation; the possibility of helpful competition from peers; the alleviation of tutor shortages at certain periods; the preparation of students for the classroom situations of advanced education.*

In time, supervisors themselves initiated group tutoring for a variety of reasons. Examples of such groups include, among others:

- A group of six students whose reading skills were extremely limited in spelling and grammar. They had been referred by the Massachusetts Division of Employment Services and were 18 to 25 years old.
- An advanced group of three who ordinarily came to the session together.
- Groups of two to five, organized intermittently when there was a shortage of tutors, with the teaching focus on spelling.
- A group of six advanced students, for whom no tutors were available, working together on a continuing basis--with marked differences in personality characteristics and varied skill levels.
- A group of five preparing for high school equivalency tests or matriculating into broader educational experience.

Of these and other established groups, no single experience was reported as being successful for all members; although some supervisors were optimistic regarding future group work providing certain conditions were met.

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* An illustration of the value of group interaction appeared in one report on group tutoring:

> "These men enjoyed each other and the sessions, and I was really touched by their carefulness of each other--'Don't be embarrassed, we all went through that--now the way I remembered was to ....' Each in his own way in his own areas of strength was extremely helpful to me in my attempts to teach. The lessons were devoted entirely to spelling and were often review lessons for at least some of the students."

Reasons for the dissolution of groups were cited as being:

- Disparity of learning rate among group members.
- Disparity of their educational backgrounds.
- Absenteeism among students, which made planned lessons difficult to complete with all.
- Lack of enough individual time with students.
- Tutors' or students' drop out.
- Attainment of students' goal.

(In the first group listed above, students had enrolled for the specific purpose of getting a job. When this was achieved all but one dropped out.)

- Tutors' inability to synchronize instruction for all members of the group.

Conclusions and recommendations drawn from reports of those conducting the experiments appear below:

1) Under no circumstances would they advocate group tutoring for pre-literate or beginning literate students.
2) Group members would have to be at approximately the same level of achievement in all reading skills.
3) All group students would have to be advanced, with only similar specific skills needing to be taught, such as spelling and grammar.
4) The group must be essentially homogeneous.
5) The tutor must have special training and experience in group instruction.
6) For the tutor, training should emphasize appreciation for individual differences and an understanding of group interaction and some theory of group dynamics, in addition to special techniques related to the teaching of reading.
7) Students should be introduced to the notion of group work in their first interview; and if group work were preceded by one-to-one instruction, advancement to a group should be featured as a "promotion".
8) High standards of attendance must be maintained.
9) Well-structured, though flexible lesson plans should be made.
10) One suggestion was that group work be alternated with individual tutoring on successive nights.
11) It was recommended that all students should have some group tutoring before leaving the program to acclimate them to a classroom situation.

e. Desirable Qualities for Tutoring

In the foregoing descriptions it can be seen that the volunteer tutor was of great importance in the MCPS system. His regular presence in the center, his ability to relate to the student, his judgment regarding materials; his sensitivity to the student's educational and personal needs; his personal attitudes and his capacity for accepting and profiting from supervision and direction, were all important influences on the student's learning.

This influence, coupled with the relatively high drop out rate among tutors, both before and after tutoring briefly, pointed to the desirability of defining some more stringent screening measures for tutor-candidates than the system employed.

Along these lines various systematic attempts were made to isolate the characteristics or elements associated with the most effective tutoring in the MCPS system. Research efforts to arrive at a description by considering tutors of students who made the most reading progress were not productive. There were relatively few tutor-student partnerships which continued long enough to produce progress measurable with the tests in use in the Project. In addition, even long-term associations were apt to be with two tutors for alternate sessions rather than with a single tutor.

Students in interviews defined the best tutors in terms of their punctuality, their regularity of attendance, and their continued concern for the student's progress.

In the summer faculty-workshops requests for descriptions of the best tutors from a prototype in each center were not fruitful. Supervisors did, however, supply lists of qualities or characteristics most valued in tutors. Their generalizations were similar, emphasizing tutors' personal characteristics rather than educational experience or expertise, and were related for the most part to tutors' performance in the center in interpersonal rather than educational ways.

In the supervisors' responses, those desirable qualities which centered around attitudes toward the student were: "respect and warmth..not condescending..tact..patience.. enthusiasm..understanding..pleasantness..sense of humor.. sensitivity to moods and feelings of people..naturalness and sincerity..adaptability..realistic expectation of student's ability to learn and the tutor's own ability to teach."

Those comments which focused on the tutor as a person identified desirable qualities as: "self-confidence.. maturity..knowledge that he can learn a great deal from his pupil..interest in others before himself..broad interests.

Those tutor-attributes which were reflective of supervisor-tutor relationships were outlined as: "flexibility--a willingness to remain open and learn and accept criticism.. ability to adapt to new pupils and situations..to follow procedures and materials as outlined..responsibility.. dependability."

Only one paper listed: "Firmness--not letting the student 'goof off'..sticking to the task at hand."

C. Maintenance of One-to-One Ratio

In practice, a major problem area in the Project, operationally as well as pedagogically, centered around attempts to maintain a one-to-one relationship of tutors and students. This problem required heavy involvement of central resources as well as of those of individual centers.

The more definable components of the problem were: the need for almost constant replenishment of the volunteer tutor ranks, continued training of new tutor candidates, satisfactory assignment of tutor-student teams and to some extent nightly reassignment. Closely related to these components were the irregularity of attendance of tutors and students and the drop out rate in both groups.

1. Drop out of Tutors

Two reasons for drop out were apparent among candidates of almost every tutorial group. Many of those without previous teaching experience or familiarity with the field of reading were overwhelmed by the mass of material they were to master and teach, by the scope of the general field of reading, and by a sense of their own personal inadequacy for the work. A typical reaction was described by one tutor-candidate. He later commented that he would not have returned even for the second tutorial session had it not been for his tutor-friend's supporting remarks and assurance that "it all sounded much more complex than it actually was."

In the other extreme, some candidates who had been attracted to the program because of their previous experience in the teaching of reading or English, took issue with the system and dropped out either before or after tutoring. When it became clear that their own preferred systems, which varied greatly, could not be employed to change the program radically they elected to leave.

Also in almost every tutorial were a few candidates who had enrolled with the intention of using the materials and techniques to set up their own programs. Only a small proportion of these came with the previous knowledge and authorization of the central administration.*

Other reasons for tutors' drop out, either before or after tutoring, included a variety of personal reasons such as: conflict with previous commitments, family illnesses, unexpected moves from the city, pregnancies, hardships of transportation, and occasionally, dissatisfaction with center or student assignments, or the tutor's feeling of having "done his bit".**

2. Experimentation with Tutorials

Experimentation with the tutorial took place throughout the two grant periods. Changes were aimed at increasing tutors' efficiency, confidence and regularity of attendance, and at keeping overall Project involvement in balance, without sacrificing the quality of the tutors' training.

In all, 19 major tutorials took place during the two grant periods. These varied in size, location, emphasis of content, manner of presentation and personnel involved.

Experimentation with numbers of candidates enrolled, who could be taught effectively, took place in tutorials of from 25 to 167 tutor-candidates. Even with assistants for the Head Supervisor, an upper enrollment of 30 to 40 seemed most satisfactory since it still permitted some individual attention and a sense of personal affiliation for the trainees. For, in addition to its training purposes, the tutorial was seen as an instrument for establishing a sense of team spirit and mission in connection with the Project's activities.

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* The extent of this kind of participation, whether or not it was authorized, was strong indication of the growing recognition of need for programs for teaching adult illiterates, and of the paucity of materials and knowhow for establishing such programs.

** Many tutors "took a leave" when their students dropped out or moved on to other training.

Most major tutorials were held at varied locations until after the Project's move to central Boston headquarters where auditoriums were available on the same floor. For these city-wide tutorials volunteers were drawn from fifty different communities in the Greater Boston area and beyond.

Tutorials held to staff new centers were often held at the center location in order to generate community enthusiasm and participation. Examples were the tutorials at the Headquarters of the National Association for the Advancement of Colored People and one in the Community Center of Columbia Point, a low-income city housing development.*

Tutorial variations in presentation included: changing emphasis of regular content as warranted; special introductions of material such as newly developed worksheets by assisting supervisors; or presentations of broader educational techniques and theoretical practices by the educational specialist.

Besides the basic tutorials and the periodic training sessions for tutors in the centers, other educational enrichment was provided through the Project for the volunteers. For example, a special seminar exploring the tutoring of adult illiterates in groups was held for representative tutors from each center. For all tutors, an address at the Massachusetts State House, on OEO's activities in adult literacy, was sponsored by the Project. In cooperation with the International Reading Association, special invitations were issued to all tutors for the two-day pre-conference seminars on Adult Basic Education, which met before the IRA Annual National Conference in Boston, 1968.

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* The NAACP tutorial, in May, 1965, produced the largest enrollment to that time, with 86 candidates, but relatively few Negroes despite its location and joint sponsorship. This center became the NAACP-Prudential Center, moving to the employees' cafeteria of the Prudential Tower Building when the original headquarters were overcrowded with tutors even before the enrollment of students.

Originally the Columbia Point volunteer staff, organized in July, 1965, included residents and trainees from other areas as well. A large drop out occurred at the end of the summer, with resident tutors explaining that they had assumed the program would not continue during the winter, despite previous announcements of its year round character.

These and similar efforts were made in part in response to supervisors' suggestions that such enrichment opportunities would strengthen tutors' attendance and commitment to the work. While the activities were well received and were for many volunteers highly deserved "rewards" for service, there was no clear evidence of overall change in tutors' attendance patterns or length of service as a result.

As might be expected from the nature of each teaching method, Project involvement in the training of tutors and professional faculty for MCPS centers far outweighed faculty training activities for the RHG programmed method. In Appendix J, page J-8, a summary of Project activities revolving around a tutorial is descriptive of the extent and variety of Project resources utilized in this way.

3. Tutor-Student Assignments

Supervisors were aware that suitable matching of tutors and students was extremely important to the success of the students. Some viewed the activity almost as an art. Rather than make an obvious mismatch, supervisors occasionally would send tutor or student away to be called when a suitable working partner was available. The close working relationship and the dependency tendencies which sometimes developed for one or the other working partner merited the extra attention, they judged.

Assignment of tutor student pairs was not only a task when new students or tutors arrived at the centers, but nightly as well, as temporary reassignments had to be made to cover for absences or extreme tardiness.

One study of quarterly summaries of the attendance of students and tutors in the MCPS centers during 1967 indicates the nature of the problems. Although the number of active students throughout the MCPS centers that year averaged around 19, per center per month, the actual range in the different centers was from three to 53; and within each center, attendance varied from session to session. Over the year the monthly median for centers ranged from 11 to 21 students.

A review of parallel figures for the MCPS tutors during the same period points up the magnitude of the

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problem of making and maintaining satisfactory assignments for tutor-student working pairs. It is important to recognize that a high proportion of these tutors would be available only one night per week so the numbers cannot be compared on a straight one-to-one basis. The actual range in the different centers was three to 43, with the number of active tutors throughout the program averaging around 17, per center. Over the year the monthly median for centers ranged from 11 to 18 tutors.

Keeping the supply of tutors or students in a one-to-one proportion was a problem within centers on a nightly basis. Between centers it was also a problem, with certain centers attracting tutors more than others because of convenience to public transportation or reluctance on the part of tutors' families to have them alone in the areas at night.

Excerpts from one report illustrate a typical supervisory experience with this problem:

"Less than half of the students active in the center can be depended on to attend both nights consistently. Some of the tutors plan to teach only one night per week. While I am grateful for their help it does create a problem in matching pupil and tutor on a regular basis. (Frequently nights do not coincide.) To illustrate this problem look at the attendance figures for March 19th and 21st. On the first evening there was an excess of three tutors and on the second evening there was a shortage of five. The figures are not typical but the irregularity of attendance is."

A plan, directing substitute tutors through a central calling system, to anticipate over-supplies or shortages of tutors was initiated during summer vacation periods. Obstacles to the use of such a system on a nightly basis were: the failure of participants--students or tutors--to give adequate notice in advance; tutors' reluctance to go to other centers or to work with other students; and within the center, some students' reluctance to work with a stranger. Many preferred working alone rather than: "Have to prove myself all over again."

When supervisors had time to arrange it, enrichment study was available to tutors whose students did not appear, in an effort to up grade their skills and prevent their own drop out. Some centers had a library of materials and books for tutor's individual or group study at any time.

4. Implications for Students

Students without tutors were either paired with other students and their tutors--a practice which was sometimes resented all round--or tutored by the supervisor along with other duties. A representative situation was described by one supervisor following a rapid increase in enrollment in the center and difficulty in maintaining steady tutor help: "I spend most of my time tutoring, usually more than one pupil...Have found it impossible at times to attend to the needs of both pupils and tutors, particularly the less experienced tutors."

Thus in situations of this kind the quality of the students' educational experience necessarily depended upon the volunteer tutors. If the tutors were inexperienced, and themselves in turn dependent on the supervisors for the continued training advocated in the system, the difficulties were apt to increase.

Sometimes, for instance, the extended time which students spent in the coding, decoding and sounding out exercises was in part a function of the tutor's lack of knowledge of how to proceed with the teaching of language and the use of the materials beyond those stages.

Recommendations for a third paid supervisor in each center did not hold promise of solving the problems, with the wide disparity of numbers of students, and of tutors, from center to center and night to night. Clerical help could and did relieve supervisors of some duties, although some supervisors preferred to take attendance and the like, themselves, as a means of staying in touch with all participants.

The combined force of the conditions described above, for some students, meant that they did not in effect have one-to-one tutoring. Even for those who did, in many cases there were frequent changes of tutors. In one comparative analysis of tutor and student attendance it was revealed that some students had had as many as 15 to 22 different tutors who had tutored them only once, out of a total of 23 to 34 tutors with whom they had worked. Whether under these circumstances the one-to-one relationship during the single sessions offered advantages over a small classroom situation with a paid and relatively constant instructor is questionable.

Senior teaching staff members of the two methods were quite outspoken with criticisms, but MCPS faculty remained enthusiastic about the system and the results it attained with many students. Despite the difficulties with the one-to-one ratio there was more individual attention possible both in theory and practice than in RHG. There was relative flexibility in the use of the materials, which became freer as data collection for research purposes was completed in certain areas. There was also freedom to aid students through transitional periods to other training programs or broader educational opportunities.

With discerning tutors instruction was successfully adapted to specific needs of many students. Most regular tutors came to know the approaches and pacing of instruction most advantageous for their student's learning.

Students were impressed with their tutors' contributions, and found it difficult to comprehend that they devoted so much time--without pay--because of an interest in helping them, individually, to learn.

The most frequently reported areas of gain among MCPS students were in word attack skills, personal growth and social adjustment.

IV. SUMMARY DISCUSSION

In earlier chapters of this report the student population has been described as broadly heterogeneous and it has not been surprising to find that it was difficult to meet the pedagogical needs of such a varied population with one of two sets of training materials.

A. The Methods: Criticisms and Conclusions

In this chapter strengths and weaknesses of the two methods--for this population--have been described in representative quotations from those participating in the training, and in reports from those analyzing the whole.

Some general insights to the adult student as a learner have also appeared in the illustrative detail. Various needs have been observed in the reactions of this essentially volunteer student population which have seemed to interfere with the students' learning. Some of these imply criticism of one or both of the methods. Some needs were satisfied by the methods for certain groups of students, but not for all.

Both methods were criticized to some degree for the following aspects:*

- The single starting point for all students regardless of previous level of reading attainment.
- The extended emphasis on drill.
- The stress on perfecting "pure" letter sounds unfamiliar to the students' environment.
- The use of nonsense syllables with mature adults.
- The postponement of reading for meaning until basic skills were developed.
- The failure to provide systematic training for early transfer of students' growing skills in practical application.
- The scarcity of reading content within the students' capabilities which was suitably mature and interesting.

In both methods some of these conditions had been changed or were in the process of being changed during the latter part of the grant period. The eclectic nature of the MCPS system--compared to RHG's tight programming--permitted greater flexibility for integrating supplementary materials and new procedures into the basic structure and for effecting experimentation toward meaningful change.

Pedagogical analyses previous to the final months of the grant, and the above mentioned change, concluded that:

1. Both methods needed considerable improvement, with major revisions in teaching strategies and materials.

2. The continued use of RHG for this student population was not justified unless outside materials and enrichment activities were incorporated into each session and more flexibility in the method itself could be arranged.

3. Modifications were required in the MCPS system in two directions--in systematizing the use of outside materials and in overcoming the boredom for adults of the earlier parts of the Bloomfield-Barnhart readers.

4. Both methods needed more emphasis on the transfer of reading skills to everyday life situations for the achievement of genuinely functional literacy.

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* In a wide survey made by the Project in late 1967-68 of the reading materials and teaching systems being published for use in training adults, it seemed that these same criticisms would be applicable to much of the material being reviewed.

B. The Students: Their Learning Problems

While there were many instances of exceptional student progress, for many students in either of the two systems learning to read was a slow, laborious and dull process. Boredom on the part of the student was frequently reported, and certain reading difficulties such as confusion of letter sounds, reversals or omissions were reported to persist over as long as 14 to 16 months for particular students.

Although there were many exceptions to any prototypic statements about the problems of students related to their learning, some characteristic difficulties were noted. When not resolved these were assumed by teaching personnel and evaluators to be largely responsible for students' failure to master reading skills or for their drop out from the program.

To the extent that the experience in this Project with an urban population of volunteer adult students can be generalized to others, the following problems should be anticipated in adult illiterates seeking help.

- More than normal difficulty in dealing with the abstract.
  Principles in the training are hard for them to grasp, to retain, and to put into practice.
- More than usual difficulty with discrimination of shapes and sounds.
- Pervasive difficulty with all communications.
  This difficulty is not limited to mastery of printed symbols in the written word. Frequently, advancing students reported with enthusiasm that: "For the first time in my life I can talk to people," and did not even mention their increasing ability to read.
- A general lack of confidence in self and an inhibiting fear of failure.
  A related fear was that of "being discovered" as an adult illiterate, coupled with shame over previous failure to learn.
- Combinations of other handicaps along with their reading disabilities.

Other common characteristics reported were the students' need for privacy, their listlessness and extreme fatigue. Common behavioral patterns included inability to do homework or to work alone in class; irregularity of attendance and early drop out.*

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* Exceptions included students who had not been absent over a period of 73 sessions or eight to nine months, and students who arrived for study one-half to two hours in advance of the opening hour in centers where this was possible. See Chapter III for information on the students' span of attendance which ranged to 398 hours or more, and 30 months or more.

These basic difficulties were reported as being evidenced in the following needs:

- The need for frequent reassurance.
- The need for concrete evidence of progress regardless of how small.
- Especially among totally illiterate students or the slow learning--the need for close and continuing individual attention. A typical remark was: "I like to work alone with a tutor...Sharing slows me down."
- Especially among the more advanced students and a large proportion of the younger, the need for distinct evidence of rapid progress, and the need for variety in the training and in the reading content.
- The need for a clear understanding of the relevance of the training to their daily living and their goals for the future.

Other kinds of problems which were reported frequently and were known to interfere with, or interrupt students' training were:

- Physical problems- chronic conditions such as epilepsy, frequent temporary illnesses of the students or their families, or permanent conditions such as brain damage.
- Economic problems - changing conditions related to obtaining jobs or promotions as a result of the training, shifts from daytime to nighttime working schedules, or considerable overtime which heightened their fatigue during classtime.
- Emotional or psychological problems - from varied causes, sometimes resulting from interpersonal relationships outside the center, or associated with previous schooling experiences.*

C. Conclusions

Overall, the information in this chapter, when distilled, reveals three major stumbling blocks to students' learning, which were in several respects concerns of the total Project staff:

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* Some students had had institutional care involving therapy, or treatment for conditions such as alcoholism.

Among former special class students--particularly the young men--there was bitterness about "wasted years just sitting it out". Some had plans similar to those of a student in his late teens. As a result of his training in the Project he had attained and held his first job, for over a year. His plan was to find, and report his success to, a former teacher who had forecast to the student that he would never be able to get a job.

1. The provision of enough palatable drill to permit the mastery of basic reading skills without stifling the adult students' interest or causing their departure from the program.

2. The insurance of regular attendance by the volunteering students for the length of time necessary for teaching the skills.*

3. The provision of sufficient individual attention to students--preferably from the same teachers or tutors.

In general neither method was taught as intended under the modified plan. This circumstance was due in part: 1) in MCPS, to problems associated with maintaining the one-to-one relationship with two volunteering populations--tutors and students; and 2) in RHG, to the infeasibility of teaching so heterogeneous a population in groups.

The atmosphere of accepting informality in the centers was valuable for recruiting wary students, for putting them at ease and for fostering social growth among participants. However, it may have been too permissive to insure regular attendance over the long period in an undertaking so difficult for the students.

It was clearly demonstrated that almost all of the Project's students needed individual attention at some periods in their training, if not throughout. It was also considered important that most students have some group experience before leaving the program.

The participation of the volunteer was crucial in the MCPS program and important in the RHG. Hundreds rendered exceptional service, some over long periods of time. The irregular attendance of others, and departures from the Project, constituted considerable drain of Project resources and ranked high in causing setbacks in students' progress or speeding their departures.

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* Compared to the length of time required for teaching basic reading skills to children, and to the time estimated by most reading systems for mastery of their programs, 150 hours of instruction is far short of the requirements.

Tutors' attitudes, personalities and behavior were strongly influencing factors for students, affecting their reactions to the program, their behavior, and the quality and extent of their learning.

Faculty members, by their own reports, tended to be less demanding of the tutors because of the tutors' volunteer status. This restraint was manifested in a lack of insistence on prescribed procedures and directions in teaching, as well as in matters of attendance and promptness.

APPENDICES

APPENDIX A

CROSS TABULATIONS BETWEEN INITIAL TESTS AND SELECTED DEMOGRAPHIC CHARACTERISTICS

I. CONTENT

The tables which follow summarize the relationship between students' initial performance on the battery of objective tests and three major demographic characteristics of the students; race, sex and school history. The purposes of these analyses were to characterize the student population with regard to these dimensions, and to resolve such questions as whether or not there was a systematic relationship between level of previous education, or race, and level of performance on various tests in the battery.

The tables in this Appendix are similar in format to those in Chapter II. A general explanation of the way in which they are to be read may be found on page 10 there.

Three sets of tables are included here. Table A1 summarizes the cross tabulations presenting the relationship between initial test results and race; Table A2, between initial test results and sex; and Table A3, between initial test results and school history.

In each table the entries in the main category are cross tabulated with the results of the initial reading tests, intelligence tests and visual-motor tests. For purposes of these cross tabulations, the results on all of the tests but the DAP have been reduced to two kinds of scores: above and below the median. Scoring procedures for the latter test are described in Chapter VI.

The range of scores for each comparison is given in each table. The median score varies in different tables due to the differing number of students considered in each analysis.

Further discussion of the demographic data and how it was collected may be found in Chapter II. Discussion of the test procedures and test evaluations may be found in Chapters IV, V and VI.

II. RESULTS

Analysis of initial level of reading ability indicates that reading ability is not related to race or sex for this sample of students. This does not mean that race or sex may not be closely related to level of reading ability in the population-at-large. It does indicate however, that the adults who were illiterate and sought help to remedy their reading handicap, regardless of whether they were Negro or white, men or women, began in this program with about the same range of reading abilities.

No significant differences were found between the races in performance on the associated or "non-reading" tests. Although no one comparison indicates a statistically significant difference in ability between the Negro and the white students, it should be noted that in all test comparisons reported, the white students as a group performed slightly better on the tests than did the Negro students.

Significant differences were found between the sexes on IQ, as measured by the Lorge-Thorndike; psychological maturity, as measured by the DAP; and on vocabulary, as measured by the ABLE Vocabulary subtest. Significantly, proportionately more men than women scored above the median Lorge-Thorndike IQ. This relationship was not found when the WAIS Vocabulary subtest was used to determine IQ. More women than men, proportionately, were significantly below the median vocabulary score on the ABLE. About the same proportion of men and women drew "impaired" pictures on the DAP test; but more women than men produced "immature" drawings, while more men than women made "average" drawings.

School history was significantly related to initial level of reading ability but not to performance on the associated tests. The relationship between initial level of reading ability and school history is discussed in Chapter II.

TABLE A1

RELATIONSHIP BETWEEN RACE AND INITIAL TEST RESULTS

Test	(Range)	WHITE		NEGRO		Total
		Number of Students	Percent	Number of Students	Percent	
GATES						
Below the median	(0.0-3.2)	128	47	49	53	177
Above the median	(3.3-7.5)	144	53	44	47	188
Total		272	100	93	100	365
x^2: not significant						
SAT WORD MEANING						
Below the median	(0.0-2.9)	115	48	43	56	158
Above the median	(3.0-8.8)	125	52	34	44	159
Total		240	100	77	100	317
x^2: not significant						
SAT PARAGRAPH MEANING						
Below the median	(0.0-2.2)	101	46	40	54	141
Above the median	(2.3-9.5)	117	54	34	46	151
Total		218	100	74	100	292
x^2: not significant						
LORGE-THORNDIKE						
Below the median	(00-61)	85	46	37	57	122
Above the median	(63-116)	99	54	28	43	127
Total		184	100	65	100	249
x^2: not significant						
BEREA GESTALT						
Above the median number of errors	(9-22)	59	50	18	53	77
Below the median number of errors	(1-8)	50	50	16	47	76
Total		119	100	34	100	153
x^2: not significant						

TABLE A1 (Continued)

RELATIONSHIP BETWEEN RACE AND INITIAL TEST RESULTS

Test	(Range)	WHITE		NEGRO		Total
		Number of Students	Percent	Number of Students	Percent	
ABLE VOCABULARY						
Below the median	(1.0-5.9)	27	44	7	64	34
Above the median	(6.0-6.0)	35	56	4	36	39
Total		62	100	11	100	73
x^2: not significant						
ABLE READING						
Below the median	(1.0-4.4)	29	47	7	64	36
Above the median	(4.8-6.0)	33	53	4	36	37
Total		62	100	11	100	73
x^2: not significant						
BENDER GESTALT						
Above the median number of errors	(72-187)	30	45	9	75	39
Below the median number of errors	(36-69)	36	55	3	25	39
Total		66	100	12	100	78
x^2: not significant						
WAIS VOCABULARY						
Below the median	(46-72)	34	47	7	64	41
Above the median	(76-112)	38	53	4	36	42
Total		72	100	11	100	83
x^2: not significant						
DRAW-A-PERSON						
Impaired		49	54	12	57	61
Immature		17	19	4	19	21
Average		25	27	5	24	30
Total		91	100	21	100	112
x^2: not valid						

TABLE A2

RELATIONSHIP BETWEEN SEX AND INITIAL TEST RESULTS

Test	(Range)	MEN		WOMEN		Total
		Number of Students	Percent	Number of Students	Percent	
GATES						
Below the median	(0.0-3.1)	154	51	49	44	203
Above the median	(3.2-7.5)	146	49	63	56	209
Total		300	100	112	100	412
x^2: not significant						
SAT WORD MEANING						
Below the median	(0.0-2.7)	128	51	43	45	171
Above the median	(2.9-9.5)	125	49	52	55	177
Total		253	100	95	100	348
x^2: not significant						
SAT PARAGRAPH MEANING						
Below the median	(0.0-2.1)	118	52	42	47	160
Above the median	(2.2-9.5)	108	48	47	53	155
Total		226	100	89	100	315
x^2: not significant						
LORGE-THORNDIKE						
Below the median	(00-61)	82	44	48	64	130
Above the median	(63-116)	106	56	26	36	132
Total		188	100	74	100	262
x^2: $p < .01$						
BEREA GESTALT						
Above the median number of errors	(9-22)	54	47	27	57	81
Below the median number of errors	(1-8)	61	53	20	43	81
Total		115	100	47	100	162
x^2: not significant						

TABLE A2 (Continued)

RELATIONSHIP BETWEEN SEX AND INITIAL TEST RESULTS

Test	(Range)	MEN		WOMEN		Total
		Number of Students	Percent	Number of Students	Percent	
ABLE VOCABULARY						
Below the median	(1.5-5.9)	31	44	15	71	46
Above the median	(6.0-6.0)	40	56	6	29	46
Total		71	100	21	100	92
x^2: $p < .05$						
ABLE READING						
Below the median	(1.0-3.3)	36	51	10	48	46
Above the median	(3.5-6.0)	35	49	11	52	46
Total		71	100	21	100	92
x^2: not significant						
ABLE SPELLING						
Below the median	(1.0-1.5)	36	51	8	38	44
Above the median	(1.6-6.0)	35	49	13	62	48
Total		71	100	21	100	92
x^2: not significant						
BENDER GESTALT						
Above the median number of errors	(69-187)	35	47	14	61	49
Below the median number of errors	(36-68)	40	53	9	39	49
Total		75	100	23	100	98
x^2: not significant						
WAIS VOCABULARY						
Below the median	(46-72)	34	47	13	50	47
Above the median	(76-112)	39	53	13	50	52
Total		73	100	26	100	99
x^2: not significant						
DRAW-A-PERSON						
Impaired		48	56	17	48	65
Immature		11	13	13	37	24
Average		26	31	5	15	31
Total		85	100	35	100	120
x^2: $p < .01$						

TABLE A3

RELATIONSHIP BETWEEN SCHOOL HISTORY AND INITIAL TEST RESULTS

Test	(Range)	HIGHEST GRADE ATTAINED										Total
		Special Class		0-3rd		4th-6th		7th-9th		10th or more		
		No.	%	No.	%	No.	%	No.	%	No.	%	
GATES												
Below the median	(0.0-3.1)	88	54	23	72	29	48	40	49	9	18	189
Above the median	(3.2-7.5)	75	46	9	28	31	52	41	51	41	82	197
Total		163	100	32	100	60	100	81	100	50	100	386
x^2: $p < .001$												
SAT WORD MEANING												
Below the median	(0.0-2.7)	74	54	18	69	29	55	28	41	10	23	159
Above the median	(2.9-9.5)	62	46	8	31	24	45	41	59	34	77	169
Total		136	100	26	100	53	100	69	100	44	100	328
x^2: $p < .001$												
SAT PARAGRAPH MEANING												
Below the median	(0.0-2.1)	67	54	18	69	27	56	27	43	11	29	150
Above the median	(2.2-9.5)	57	46	8	31	21	44	36	57	27	71	149
Total		124	100	26	100	48	100	63	100	38	100	299
x^2: $p < .02$												
LORGE-THORNDIKE												
Below the median	(00-61)	56	51	15	68	25	61	19	38	9	30	124
Above the median	(62-112)	53	49	7	32	16	39	31	82	21	70	128
Total		109	100	22	100	41	100	50	100	30	100	252
x^2: $p < .02$												

TABLE A3 (Continued)

RELATIONSHIP BETWEEN SCHOOL HISTORY AND INITIAL TEST RESULTS

Test	(Range)	HIGHEST GRADE ATTAINED										Total
		Special Class		0-3rd		4th-6th		7th-9th		10th or more		
		No.	%	No.	%	No.	%	No.	%	No.	%	
BEREA GESTALT												
Above the median number of errors	(9-22)	37	54	6	60	15	60	14	44	4	24	76
Below the median number of errors	(1-8)	32	46	4	40	10	40	18	56	13	76	77
Total		69	100	10	100	25	100	32	100	17	100	153
x^2: not significant												
ABLE VOCABULARY												
Below the median	(1.0-5.9)	15	45	9	90	7	58	2	12	2	29	35
Above the median	(6.0-6.0)	18	55	1	10	5	42	15	88	5	71	44
Total		33	100	10	100	12	100	17	100	7	100	79
x^2: not significant												
ABLE READING												
Below the median	(1.0-5.9)	20	56	8	80	6	50	6	33	2	22	42
Above the median	(6.0-6.0)	16	44	2	20	6	50	12	67	7	78	43
Total		36	100	10	100	12	100	18	100	9	100	85
x^2: not significant												
ABLE SPELLING												
Below the median	(1.0-1.6)	19	53	8	80	5	42	8	44	2	22	42
Above the median	(1.8-6.0)	17	47	2	20	7	58	10	56	7	78	43
Total		36	100	10	100	12	100	18	100	9	100	85
x^2: not significant												

TABLE A3 (Continued)

RELATIONSHIP BETWEEN SCHOOL HISTORY AND INITIAL TEST RESULTS

Test	(Range)	HIGHEST GRADE ATTAINED										Total
		Special Class No.	%	0-3rd No.	%	4th-6th No.	%	7th-9th No.	%	10th or more No.	%	
BENDER GESTALT												
Above the median number of errors	(69-187)	19	43	9	75	7	58	6	43	5	50	46
Below the median number of errors	(36-68)	25	57	3	25	5	42	8	57	5	50	46
Total		44	100	12	100	12	100	14	100	10	100	92
x^2: not significant												
WAIS VOCABULARY												
Below the median	(46-72)	21	51	6	55	8	57	4	26	5	42	44
Above the median	(76-112)	20	49	5	45	6	43	11	74	7	58	49
Total		41	100	11	100	14	100	15	100	12	100	93
x^2: not significant												
DRAW-A-PERSON												
Impaired		24	53	8	100	17	61	5	24	5	50	59
Immature		13	29	--	--	2	7	5	24	4	40	24
Average		--	--	--	--	9	32	11	52	1	10	29
Total		45	100	8	100	28	100	21	100	10	100	112
x^2: not significant												

APPENDIX B

CROSS TABULATIONS BETWEEN LOCATION OF EARLY SCHOOLING AND OTHER DEMOGRAPHIC CHARACTERISTICS

I. CONTENT

The tables in this Appendix summarize the relationships between the region of the country where the student went to school as a child, and other demographic characteristics. The tables are similar in format to those presented in Chapter II. On page 10 there a general explanation of the way in which they are to be read may be found.

II. RESULTS

Eighty-six percent of all the students whose early schooling was in the Northeastern states were white whereas only fourteen percent were Negro. On the other hand, ninety-three percent of all students whose early schooling was in the South were Negro and only seven percent were white. There is thus a striking correspondence, among the students in this Project, between the part of the country where the student received his early education and his race. As a consequence the relationships in these tables are essentially identical to those presented in Chapter II summarizing the relationships between race and other demographic categories.

The correspondence between location of early schooling and race can be explained in one of two ways. On the one hand the Project may have attracted differentially those Negroes who migrated from the South over those who were educated in Northeastern states. On the other hand, this ratio of Negroes educated in the Southern states to Negroes educated in the Northeastern states, and in need of literacy training, may be correctly reflecting the proportions to be found in the Boston community.

TABLE B

RELATIONSHIP BETWEEN LOCATION OF EARLY SCHOOLING AND OTHER DEMOGRAPHIC CHARACTERISTICS

	Northeastern States		Southern States		Total
	Number of Students	Percent	Number of Students	Percent	
RACE					
White	342	86	9	7	351
Negro	55	14	128	93	183
Total	397	100	137	100	534
x^2: $p < .001$					
SEX					
Men	367	77	92	60	459
Women	109	23	62	40	171
Total	476	100	154	100	630
x^2: $p < .001$					
AGE					
16 - 21	154	33	24	16	178
22 - 27	140	30	28	19	168
28 - 38	105	22	40	27	145
39 - 86	70	15	57	38	127
Total	469	100	149	100	618
x^2: $p < .001$					
HIGHEST GRADE ATTAINED					
0 - 3rd	17	4	37	25	54
4th - 6th	50	11	45	30	95
7th - 9th	85	19	46	30	131
10th or more	61	14	15	10	76
Special class or school	236	52	8	5	244
Total	449	100	151	100	600
x^2: $p < .001$					

TABLE B (Continued)

RELATIONSHIP BETWEEN LOCATION OF EARLY SCHOOLING AND OTHER DEMOGRAPHIC CHARACTERISTICS

	Northeastern States		Southern States		Total
	Number of Students	Percent	Number of Students	Percent	
MARITAL STATUS					
Single	245	52	37	25	282
Married	204	43	81	54	285
Widowed, Divorced, or Separated	23	5	32	21	55
Total	472	100	150	100	622
x^2: $p < .001$					
NUMBER OF CHILDREN					
No children	273	58	52	35	325
1 - 2	99	21	41	28	140
3 - 4	72	15	25	17	97
5 - 7 or more	29	6	30	20	59
Total	473	100	148	100	621
x^2: $p < .001$					
EMPLOYMENT					
Employed	274	66	71	50	345
Unemployed	106	25	40	29	146
Housewife	37	9	30	21	67
Total	417	100	141	100	558
x^2: $p < .001$					
SKILL					
Skilled	160	38	48	34	208
Unskilled	220	53	63	45	283
Housewife	37	9	30	21	67
Total	417	100	141	100	558
x^2: $p < .001$					
SOURCE OF REFERRAL					
Organization	161	37	55	43	216
Radio-TV	132	31	23	18	155
Friends/Relatives	140	32	50	39	190
Total	433	100	128	100	561
x^2: $p < .05$					

TABLE B (Continued)

RELATIONSHIP BETWEEN LOCATION OF EARLY SCHOOLING AND OTHER DEMOGRAPHIC CHARACTERISTICS

	Northeastern States		Southern States		Total
	Number of Students	Percent	Number of Students	Percent	
PARENTAL LITERACY: ENGLISH					
Yes	103	87	17	94	120
No	15	13	1	6	16
Total	118	100	18	100	136
x^2: not valid					
PARENTAL LITERACY: FOREIGN					
Yes	43	37	1	5	44
No	74	63	19	95	93
Total	117	100	20	100	137
x^2: $p < .01$					
PARENTS' FOREIGN LANGUAGE FLUENCY					
Yes	43	37	-	-	43
No	72	63	19	100	91
Total	115	100	19	100	134
x^2: not valid					
STUDENTS' FOREIGN LANGUAGE FLUENCY IN CHILDHOOD					
Yes	20	16	-	-	20
No	102	84	20	100	122
Total	122	100	20	100	142
x^2: not valid					

APPENDIX C

CROSS TABULATIONS BETWEEN SCHOOL HISTORY AND OTHER DEMOGRAPHIC CHARACTERISTICS

I. CONTENT

The tables which follow summarize the relationships between the school history of the student and other demographic characteristics. The tables are similar in format to those presented in Chapter II. A general explanation of the way in which they are to be read may be found on page 10 there.

II. RESULTS

The relationships of school history and other demographic characteristics of students closely resemble the relationships involving race or location of school and other demographic categories. Specifically, the students who were in special classes as children are distributed similarly to the white students in the Project. For example: the higher the grade in school reached by the student as a child, the greater the likelihood that the student is white. (See Chapter II)

TABLE C

RELATIONSHIP BETWEEN SCHOOL HISTORY AND OTHER DEMOGRAPHIC CHARACTERISTICS

	HIGHEST GRADE ATTAINED										
	Special Class		0-3rd		4th-6th		7th-9th		10th or more		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
RACE											
White	203	87	20	29	45	44	74	59	48	64	390
Negro	30	13	50	71	58	56	52	41	27	36	217
Total	233	100	70	100	103	100	126	100	75	100	607
x^2: $p < .001$											
SEX											
Men	220	80	68	67	76	61	111	74	60	68	535
Women	56	20	33	33	49	39	39	26	28	32	205
Total	276	100	101	100	125	100	150	100	88	100	740
x^2: $p < .001$											
AGE											
16 - 21	88	32	5	5	10	8	56	38	28	32	187
22 - 27	98	36	9	9	26	21	32	21	33	38	198
28 - 38	49	18	30	31	37	30	40	27	20	23	176
39 - 86	39	14	54	55	50	41	21	14	6	7	170
Total	274	100	98	100	123	100	149	100	87	100	731
x^2: $p < .001$											
LOCATION OF SCHOOL											
Northeastern states	236	97	17	31	50	53	85	65	61	80	449
Southern states	8	3	37	69	45	47	46	35	15	20	151
Total	244	100	54	100	95	100	131	100	76	100	600
x^2: $p < .001$											

TABLE C (Continued)

RELATIONSHIP BETWEEN SCHOOL HISTORY AND OTHER DEMOGRAPHIC CHARACTERISTICS

	HIGHEST GRADE ATTAINED										
	Special Class		0-3rd		4th-6th		7th-9th		10th or more		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
MARITAL STATUS											
Single	153	56	23	23	31	26	72	49	39	45	318
Married	113	41	61	62	63	52	63	42	44	50	344
Widowed, divorced or separated	8	3	15	15	27	22	13	9	4	5	67
Total	274	100	99	100	121	100	148	100	87	100	729
x^2: $p < .001$											
NUMBER OF CHILDREN											
No children	167	61	30	32	36	30	84	56	44	50	361
1 - 2	59	22	25	26	37	30	35	24	20	23	176
3 - 4	32	12	21	22	28	23	18	12	20	23	119
5 - 7 or more	15	5	19	20	20	17	12	8	4	4	70
Total	273	100	95	100	121	100	149	100	88	100	726
x^2: $p < .001$											
EMPLOYMENT											
Employed	166	66	37	38	70	60	79	62	54	70	406
Unemployed	70	28	40	42	26	22	31	25	11	14	178
Housewife	15	6	19	20	21	18	16	13	12	16	83
Total	251	100	96	100	117	100	126	100	77	100	667
x^2: $p < .001$											
SKILL											
Skilled	93	37	24	25	49	42	44	35	34	44	244
Unskilled	143	57	53	55	47	40	66	52	31	40	340
Housewife	15	6	19	20	21	18	16	13	12	16	83
Total	251	100	96	100	117	100	126	100	77	100	667
x^2: $p < .001$											

TABLE C (Continued)

RELATIONSHIP BETWEEN SCHOOL HISTORY AND OTHER DEMOGRAPHIC CHARACTERISTICS

	HIGHEST GRADE ATTAINED										Total
	Special Class		0-3rd		4th-6th		7th-9th		10th or more		
	No.	%	No.	%	No.	%	No.	%	No.	%	
SOURCE OF REFERRAL											
Organization	93	37	46	53	40	36	52	40	17	23	248
Radio/TV	73	29	9	10	28	25	35	27	30	40	175
Friends/Relatives	86	34	32	37	44	39	42	33	28	37	232
Total	252	100	87	100	112	100	129	100	75	100	655
x^2: p < .01											
PARENTAL LITERACY: English											
Yes	63	85	8	67	22	85	26	81	14	93	133
No	11	15	4	33	4	15	6	19	1	7	26
Total	74	100	12	100	26	100	32	100	15	100	159
x^2: not valid											
PARENTAL LITERACY: Foreign											
Yes	27	38	3	25	7	25	13	41	6	37	56
No	44	62	9	75	21	75	19	59	10	63	103
Total	71	100	12	100	28	100	32	100	16	100	159
x^2: not significant											
PARENTS' FOREIGN LANGUAGE FLUENCY											
Yes	29	41	5	42	6	21	13	41	4	29	57
No	41	59	7	58	23	79	19	59	10	71	100
Total	70	100	12	100	29	100	32	100	14	100	157
x^2: not significant											
STUDENTS' FOREIGN LANGUAGE FLUENCY IN CHILDHOOD											
Yes	12	16	3	27	5	17	8	24	2	13	30
No	62	84	8	73	24	83	25	76	14	87	133
Total	74	100	11	100	29	100	33	100	16	100	163
x^2: not significant											

APPENDIX D

CRITERIA FOR RATING DRAW-A-PERSON PROTOCOLS

In accordance with standard clinical procedure, the student was provided with 8 ½ by 11 inch white paper and a pencil, and instructed to "draw a person." After he had completed this drawing, he was asked to "draw a person of the opposite sex."

Each student's drawings were categorized by the criteria listed below as: "Impaired", "Immature", or "Average". It may be noted that the criteria were not exact, nor were there a specified number of criteria to be met in order for the category to be used. Rather, as a group, the criteria conveyed to the judge the gross level of human figure drawing represented by the category.

The interscorer reliability of two examiners using the following criteria to judge the drawings of 52 students was found to be eighty-five percent.

Impaired Category:

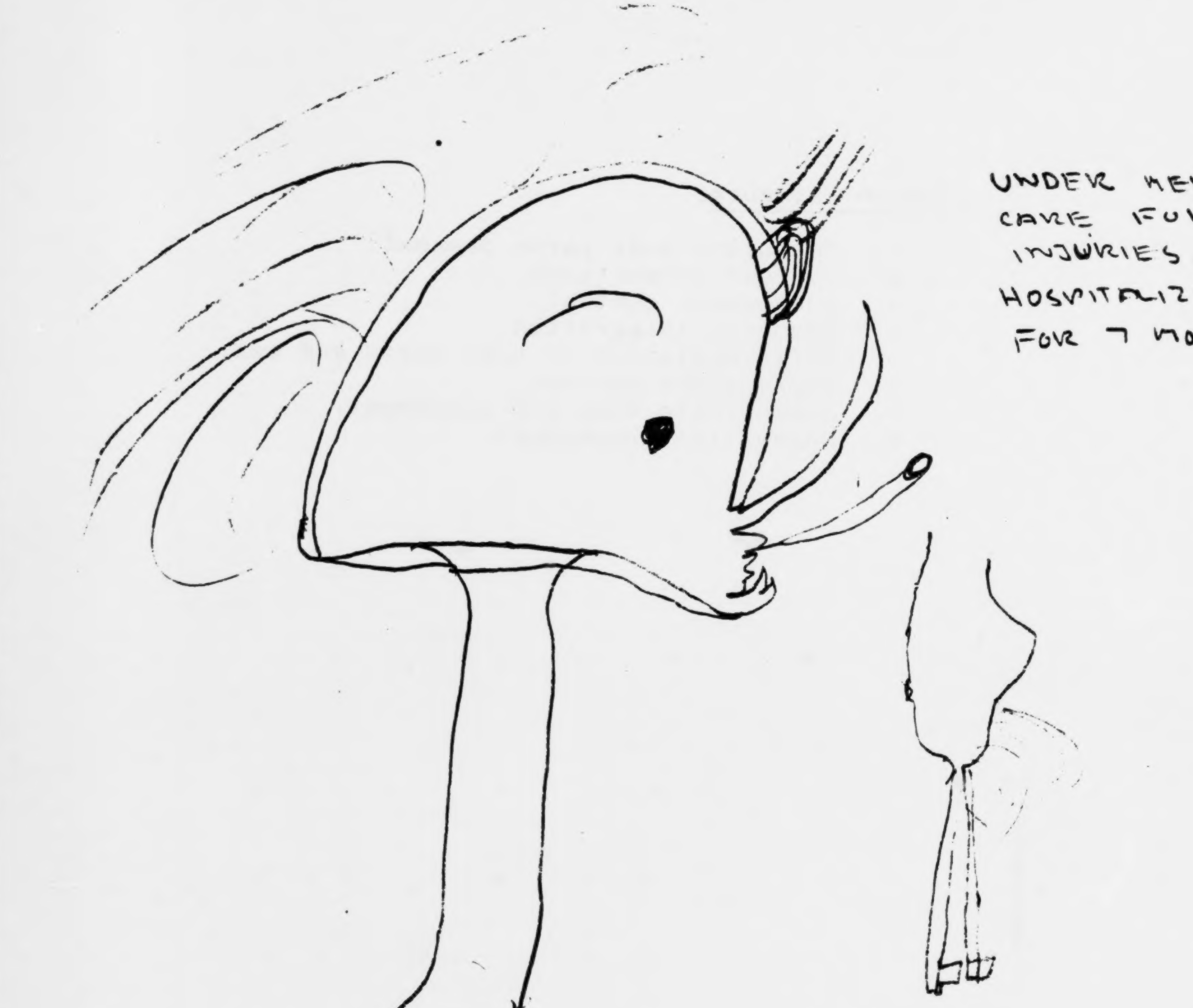
1. Absences of essential human features to a marked degree.
2. Gross distortion in proportions.
3. Obvious misplacement of body parts.
4. Lack of integration.
5. Poor motor control.
6. Use of external guides and cues.
7. Bizarre elements -- inappropriate dress, lack of some essential features, disturbed proportion, evisceration, transparencies, disturbed motility, vagueness (ghostlike), size, placement.
8. Non-human quality to appendages -- talons, pincers, claws, more than five fingers, clubbed extremities.
9. Marked distortion of sense organs -- placement, content.
10. Obvious exaggeration of a body part.
11. Excessive erasure, shading, or other indication of marked anxiety.
12. Use of caricatures.

Immature Category:

1. Immaturity.
2. Childlike, absense of gross bizarre qualities, lack of developmentally appropriate differentiation of body parts and/or sex.

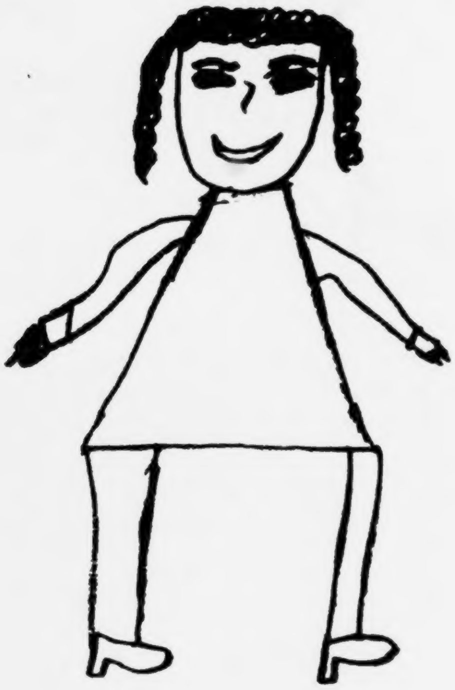
Average Category:

1. Essential body parts present.
2. Correct proportions.
3. Good motor control.
4. Adequate integration.
5. Differentiation of body parts and sex.
6. Appropriate content.
7. Appropriate size and placement.
8. Human-like appearance.

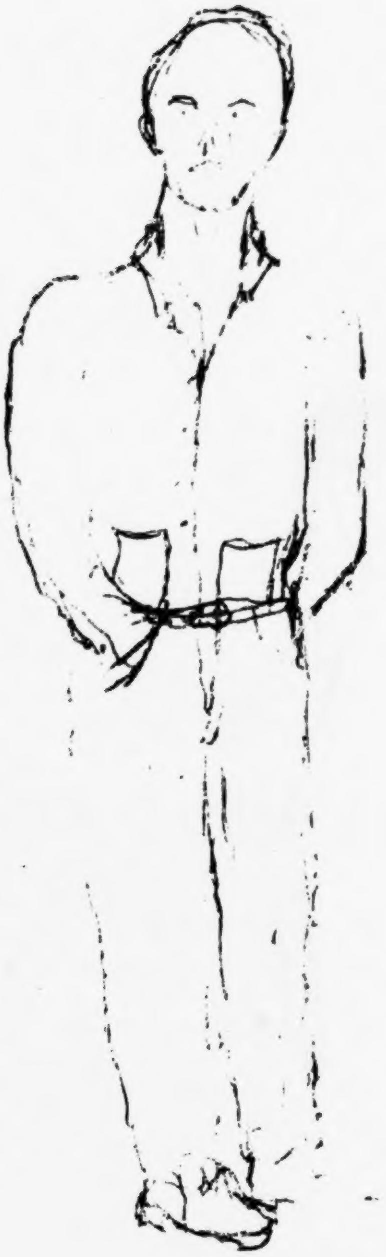


UNDER MEDICA
CARE FOR
INJURIES.
HOSPITALIZED
FOR 7 MONTH

EXAMPLE: IMPAIRED CATEGORY D-3



EXAMPLE: IMMATURE CATEGORY



SPEC. CLASS IN
WEST INDIES - SPEAKS
LITTLE ENG.

EXAMPLE: AVERAGE CATEGORY

APPENDIX E

THE ORIGINAL TEST BATTERY: BACKGROUND AND CRITIQUE

I. SELECTION OF TESTS

Descriptions of the original test battery and findings resulting from its use are presented in Chapters IV, V and VI. Some of the tests' shortcomings for the Projects' purposes are discussed in this Appendix based on the Project's experience. The rationale presented below, for the choice of the tests in the original test battery is based on recall conveyed from others, since staff members of the Project for Adult Literacy did not participate in the original selection and design of the battery.

The Gates Oral Reading Test was presumably included not only as a measure of oral reading ability, but also as an initial screening device and diagnostic tool, sensitive to types of reading difficulties. The Stanford Achievement Test (SAT), Intermediate Level: Word Meaning and Paragraph Meaning subtests were the chief instruments for assessing reading skills before and after training. The assessment of the student's literacy and general academic level was to be completed by the SAT Spelling, Language Usage, Phonics and Syllabication, and Arithmetic Applications subtests. The Lorge-Thorndike Non-Verbal Intelligence Test was to be used as the standard IQ measure. Tests which were included to investigate the hypothesis that visual-motor problems are associated with reading difficulties in adults were the Berea Visual-Motor Gestalt Test and Right-Left Discrimination Test. The specific reasons for including the Draw-A-Person Test are unclear, but the test is typically used as a basis for assessing psychological maturity, IQ, visual-motor functioning, and personality problems.

II. CRITIQUE

The present Project staff has been led to question the usefulness of these tests with a population of voluntary adult illiterate students. The reading tests were constructed for use with children and employ a vocabulary appropriate to children rather than adults. Some of the tests such as the SAT have complex procedures for recording answers and are intended for elementary school students experienced in test taking, rather than for adults who have been out of school for some time. The tests also contain certain cultural biases which may make them inappropriate for use with the disadvantaged.

The battery as a whole required approximately three hours to administer. In some instances, these hours were spread over as many as six to eight weeks, due to intermittent attendance on the part of the student and the policy of providing some reading instruction each night a student attended. A problem in acquiring complete data of students' testing performances was that students who left the program permanently during an extended testing period, left behind them incomplete and thereby less useful sets of data. Since the tests were best administered to adult illiterate students on an individual basis, the lengthy battery required much time of test administrators.

The following major critical comments are restricted to the tests in the original battery with which the Project has had most experience.

The Gates Oral Reading Test: The Gates was designed to be used in conjunction with other tests as part of a battery to diagnose reading problems. Its successful use requires administration and interpretation by highly trained testers. Its author does not provide information as to its reliability or the comparability of its different forms when used in a test-retest situation. The test originally was not designed to be used alone to provide a quantitative measure of reading ability.

The Stanford Achievement Tests, Intermediate Level: In addition to the fact that this test was designed for and standardized with children who are accustomed to taking tests, its usefulness is questionable because the standard error of measurement of the test is so large as to effect seriously its discriminatory power at the lower ability levels. The intermediate level forms prescribed were not appropriate for all students. Some students who could read a little scored zero on the SAT tests.

The SAT Spelling Test: Published norms for this test are not available; therefore, raw scores cannot be meaningfully interpreted. The comparability of forms has not been established.

The Lorge-Thorndike Non-Verbal Intelligence Test: The usefulness of this test for an adult illiterate population is questioned for several reasons. First, the test instructions to the student are cumbersome and complex. Second, responses require a shift from one form to another which is unfamiliar to the student. Third, the test utilizes graphic symbols and thus, an adult illiterate achieving a low score may actually be demonstrating inability to deal with graphic symbols, rather than a more generally limited intellectual ability. Visual-motor difficulties or others, rather than limited intellectual endowment, may lead to spuriously low scores.

Berea Visual-Motor Gestalt Test: The test was found limited in its provision of basic scoring and standardization data. The scoring instructions provided by the test's developers were inadequate; no published norms were available to allow for test interpretation; and no data concerning the test's reliability or validity were available.

The Right-Left Discrimination Test: Normative data were not available.

Draw-A-Person Test: As noted above, the original reason for including the DAP in the test battery is unclear. The test is most often used clinically with adults to evaluate personality parameters in the light of other data. The data obtained with the DAP on this project were scored and used as a rough index of one personality parameter, psychological maturity, related to the representation of the human body as drawn by the student. It should be noted that the test lacked relevance in the eyes of adults who had come to the program to learn how to read, Some of them found it disturbing.

APPENDIX F

100-HOUR FOLLOW-UP TESTING FOR EXPANDED SAMPLE

I. CONTENT

The data included in the tables of this Appendix are based on the sample of 52 students who were tested on the partial battery after having received 100 hours of instruction and who had been tested on the same tests at entrance into the program. Fifteen of these students did not receive 50-hour follow-up testing on all of the partial battery tests, while thirty=five did. The tables provide comparisons of only initial and 100-hour test results. The data are shown for the combined student sample as well as separately for those in the MCPS instructional method and those in the RHG instructional method. Table F1 shows initial median grade level and median change for each test after 100 hours, and Tables F2 through F4 show the number of students who increased, decreased or remained the same after 100 hours, on each of the tests.

II. RESULTS

The tables reveal a tendency which is similar to that discussed in Chapter IV, for the MCPS method to show somewhat greater gains than the RHG method. These findings, also, like those in Chapter IV, are not statistically significant. (Chi square tests: Gates, $p < .20$; SAT Word Meaning, $p < .30$; SAT Paragraph Meaning, $p < .30$.)

TABLE F1

COMPARISON BY INSTRUCTIONAL METHOD OF INITIAL MEDIAN GRADE LEVEL WITH MEDIAN CHANGE AT 100-HOUR RETEST

Test/ Level/ Change	Instructional Method		Combined (N=52)
	MCPS (N=35)	RHG (N=17)	
Gates Oral Reading			
Initial Grade Level	2.5	2.6	2.5
100-hour Median Change	0.4	0.3	0.3
SAT Word Meaning			
Initial Grade Level	2.3	2.9	2.5
100-hour Median Change	0.4	0.1	0.2
SAT Paragraph Meaning			
Initial Grade Level	1.9	2.0	1.9
100-hour Median Change	0.3	0.0	0.1

TABLE F2

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 100-HOUR TESTS AND BY INSTRUCTIONAL METHOD

GATES ORAL READING TEST

Change/ Range	Instructional Method		Combined (N=52)
	MCPS (N=35)	RHG (N=17)	
Improved	28	10	38
(Range of improvement)	(0.1-3.1)	(0.1-1.3)	(0.1-3.1)
Decreased	6	6	12
(Range of decrement)	(0.1-0.8)	(0.1-1.3)	(0.1-1.3)
No change	1	1	2

TABLE F3

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 100-HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT WORD MEANING TEST

Change/ Range	Instructional Method		
	MCPS (N=35)	RHG (N=17)	Combined (N=52)
Improved	22	10	32
(Range of improvement)	(0.1-2.7)	(0.1-2.3)	(0.1-2.7)
Decreased	6	6	12
(Range of decrement)	(0.2-0.7)	(0.1-0.3)	(0.1-0.7)
No change	7	1	8

TABLE F4

STUDENT DISTRIBUTION BY CHANGE INITIAL TO 100-HOUR TESTS AND BY INSTRUCTIONAL METHOD

SAT PARAGRAPH MEANING TEST

Change/ Range	Instructional Method		
	MCPS (N=35)	RHG (N=17)	Combined (N=52)
Improved	20	7	27
(Range of improvement)	(0.1-3.0)	(0.2-2.4)	(0.1-3.0)
Decreased	10	7	17
(Range of decrement)	(0.1-2.1)	(0.1-4.4)	(0.1-4.4)
No change	5	3	8

APPENDIX G

BEREA VISUAL-MOTOR GESTALT TEST: SCORING SYSTEM
SUBSTITUTION OF BENDER VISUAL-MOTOR GESTALT TEST

I. BEREA VISUAL-MOTOR GESTALT TEST: SCORING SYSTEM

Because no adequate scoring procedures were recommended for the Berea Test, the problem of developing a scoring system was approached by the Project's research staff with the aim of maintaining the greatest simplicity and efficiency. Considerable efforts were required for the development of adequate procedures in order to utilize data already collected as a part of the original test battery.

It was assumed that the scoring of Berea drawings could be carried out similarly to the procedures for scoring the Bender Visual-motor Gestalt Test, the well-known predecessor of the Berea. In the latter test a selection of the standard "signs" of visual-motor impairment may be revealed in inaccuracies of drawings of geometric patterns.*

Of the twelve designs which comprise the Berea test, only the first four were used for scoring. The other designs were judged to be too complex for the establishment of direct and reliable scoring criteria. Eight "signs" were specified, representing various kinds of inaccuracies of reproduction: 1) lack of closure; 2) disproportion of parts; 3) poor motor control; 4) incorrect spatial relations of parts; 5) perseveration or reduplication of parts; 6) addition of parts not in original; 7) deletion of unit; 8) substitution of part not in original for original part. Presence of each difficulty received a score of one error.

All of the eight types of difficulty were not applicable to each of the designs. The determination was made as to which of the "signs" were applicable to each of the different designs, and this determination established the maximum score for each design. In the event that a reproduction was so grossly distorted that scoring in terms of each area could not be sensibly performed, the maximum score for that design was assigned.

---

*As a rule these "signs" are considered by clinicians as preliminary, functional evidence of structural central nervous system impairment or "organicity".

Reliability of the scoring system was examined in two ways. Interscorer reliability was determined by means of a rank order correlation between the results of two scorers. This was found to be .86, which is highly significant ($p < .001$). Intra-scorer reliability was determined by correlating the scores of odd vs. even designs, and was found to be .78, also highly significant ($p < .001$). The scoring was viewed as being reliable at an acceptable level.

II. SUBSTITUTION OF BENDER VISUAL-MOTOR GESTALT TEST

In addition to the fact that no adequate scoring procedures were provided by the Berea test's developers was the disadvantage of having no published or unpublished information available as to the tests reliability or validity.

By July, 1967 the Project's research staff, using the scoring procedures developed on the Project, had scored a sufficient number of Berea protocols to permit analyses of the results in relation to other information about students for the studies underway. At that time, in connection with a general change of the original test battery for a new and more appropriate one, the use of the Berea was discontinued and the Bender Visual-Motor Gestalt Test was substituted in its stead. Since the Project's scoring procedures for the Berea had been modeled on those ordinarily used for the Bender, it was possible to assess the Berea findings with the more traditional and standardized Bender. Besides the large literature supporting its use, the Bender was quicker to administer than the Berea, and was not confounded with the pattern of recall, as was the Berea. With the Berea test the design to be reproduced is exposed to the student for five seconds only, and he then draws what he recalls. With the Bender, the design is left in the student's view while he copies it. Studies reporting on the use of the two tests and comparing them are reported in Chapter VI.

APPENDIX H

MEASURE FOR READING IMPROVEMENT COMPARISONS OF 150-HOUR STUDENT SAMPLES

Chapter VII compares those 150-hour students with above the median reading improvement and those with below the median improvement as defined by retest performance on the Gates Oral Reading Test. Reasons for selection of the Gates as the criterion measure are discussed below:

Three tests might have been used for this purpose: the Gates, the SAT Word Meaning and SAT Paragraph Meaning tests, or a composite of all three. The latter possibility was rejected because of the low intercorrelation of improvement scores among the tests. The following procedure for determining the intercorrelations of improvement scores was used.

An improvement score on each of the three tests was obtained for each of the 36 students in the sample. These scores reflected the difference between the initial and 150-hour retest results. These difference--or improvement--scores for each of the tests were intercorrelated using the Spearman rank order correlation. Results presented in Table H1 indicated that the Gates improvement scores were not related to either of the SAT subtest improvement scores, but that the improvement scores for the two SAT tests were significantly related. The results were interpreted in the following way.

For the students, the easiest questions on the two SAT tests were more difficult than the easiest questions on the Gates. As a consequence initial test scores of entering students with the greatest reading difficulties varied considerably depending upon the test taken. For example, some students with partial success on the Gates, scored zero on the Word Meaning and Paragraph Meaning tests. If, after instructions, these same students obtained even a single correct answer in the tests on which they had previously received zero, the new raw score could reflect a change of almost two grade levels. Thus actual, but minor, reading improvement by an initially poor reader would be reflected as a much higher increase, in improvement score, than would be the case with a similar amount of improvement of a student whose initial reading level was higher. Since the two SAT tests share this shortcoming, improvement scores were interrelated between them, but not with the Gates as well. Of the 36 students in the sample in question, 13 had received zero initially in the Word Meaning and 14 had received zero initially in the Paragraph Meaning subtests.

The Gates test did not share this difficulty of a large gap between a score of zero and the first possible grade level which could be earned by correct responses. Thus from the standpoint of difference-scores, or measured improvement, the Gates provided a more straightforward assessment, for this purpose, than either the SAT Word Meaning or Paragraph Meaning tests; and it was chosen as the instrument for ranking the 150-hour students on amount of reading improvement.

TABLE H1

INTERCORRELATIONS BETWEEN IMPROVEMENT SCORES ON TESTS OF THE PARTIAL BATTERY AFTER 150-HOURS OF INSTRUCTION

Tests Correlated	Spearman Rho
Gates x SAT Word Meaning	-0.08
Gates x SAT Paragraph Meaning	0.09
Word Meaning x Paragraph Meaning	0.48 ($p < 0.01$)

APPENDIX I

BIBLIOGRAPHY OF TESTS AND REFERENCES

Bender, Lauretta. A Visual-Motor Gestalt Test and Its Clinical Use. New York: American Orthopsychiatric Association, Res. Monog. No. 3, 1938.

______. "Instructions for the Use of the Visual-Motor Gestalt Test." New York: American Orthopsychiatric Association, 1946.

DeHirsch, Katrina, et al. Predicting Reading Failure. New York: Harper & Row, 1966.

Drake, Charles and Shedd, Charles. Berea Visual-Motor Gestalt Test. Unpublished test, 1964.

Gates, Arthur I. and McKillop, Anne S. "I. Oral Reading," Gates-McKillop Reading Diagnostic Tests, Forms I and II. New York: Bureau of Publications, Teachers College, Columbia University, 1962.

Goodenough, Florence L. Measurement of Intelligence by Drawings. Chicago: World Book Co., 1926.

Karlsen, Bjorn; Madden, Richard; and Gardner, Eric F. Adult Basic Learning Examination, Levels I and II, Forms A and B. New York: Harcourt, Brace & World, Inc., 1967.

Kelley, Truman L.; Madden, Richard; Gardner, Eric F.; and Rudman, Herbert C. Stanford Achievement Test, Intermediate I, Partial Battery, Forms W, X and Y. New York: Harcourt, Brace and World, Inc., 1964.

Kelley, Truman L.; Ruch, Giles M; and Terman, Lewis M. "Spelling List: Form D - for All Batteries," Stanford Achievement Test. New York: World Book, 1940.

Lorge, Irving and Thorndike, Robert L. The Lorge-Thorndike Intelligence Tests, Level 4 (Grades 7, 8, and 9) Forms A and B, Non-Verbal Battery. Boston: Houghton-Mifflin Co., 1954.

Pascal, Gerald R. and Suttell, Barbara J. The Bender-Gestalt Test Quantification and Validity for Adults. New York: Grune and Stratton, 1951.

Rasof, Elvin and Neff, Monroe C. "Part 1: Reading Comprehension" and "Part 2: Word Recognition," Adult Basic Education Student Survey, Form A. Chicago: Follet Publishing Co., 1967.

BIBLIOGRAPHY OF TESTS AND REFERENCES (Continued)

Shedd, Charles and Drake, Charles. Right-Left Discrimination Test. Unpublished test.

Siegal, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, Inc., 1956.

Wechsler, David. "Vocabulary Subtest," Wechsler Adult Intelligence Scale. New York: The Psychological Corp., 1955.

APPENDIX J

MCPS PROGRAM PROCEDURES AND MATERIALS

In this appendix is a partial bibliography of the materials used in the MCPS program, including those published by others and those developed by MCPS supervisors and tutors for delineating the method or enhancing specific aspects of it.

In addition sample pages are presented from the "MCPS PROCEDURES MANUAL OUTLINE" to illustrate how some of the principles described in Chapter IX are carried out in the students' initial visit to a literacy center and in subsequent tutoring sessions.

PARTIAL LIST

MATERIALS USED IN THE MCPS SYSTEM

STUDENT TRAINING

For Basic Instruction - Published by Others

Bloomfield, Leonard and Barnhart, Clarence, *Let's Read*, Vol. 1-9; C. L. Barnhart, Inc., Bronxville, New York, 1963.

Gillingham, Anna, *Phonetic Drill Cards for Remedial Reading and Spelling*, (Green Seventh Edition), Educators Publishing Service, Inc., Cambridge, Massachusetts.

Plunkett, Mildred B., and Peck, Caroline Z., *A Spelling Workbook for Early Primary Corrective Work*, (Books I, II), Educators Publishing Service, Cambridge, Massachusetts, 1960.

__________________, *A Spelling Workbook for Corrective Drill for Elementary Grades*, 1966.

__________________, *A Spelling Workbook Emphasizing Rules and Generalizations for Corrective Drill*, 1967.

For Basic Instruction - Developed for MCPS

Drake, Charles, *Literacy Skills Sheet* (a screening test to establish literacy level), Massachusetts Council for Public Schools, Inc., Boston, Massachusetts, 1963.

Grush, Helen, *Teacher Instructional Materials*, Teacher's Manual and Student Workbook, developed for the Adult Literacy Project, Massachusetts Council for Public Schools, Inc., Boston, Massachusetts, 1964.

For Literacy Skills Development: Published by Others

Coleman and Jungeblut, *Reading for Meaning*, Vol. 4-10, J. B. Lippincott Company, Philadelphia, New York, 1962.

Akin, Florence, *Word Mastery*, The Riverside Press, Cambridge, Massachusetts.

McCall-Crabbs, *Standard Test Lessons*, Vols. A-E, Teachers College Press, Teacher's College, Columbia University, New York, New York, 1961.

Merriam-Webster, *Elementary School Dictionary*.

Reader's Digest, *Readers' Digest Reading Skill Builders* (all levels), Reader's Digest Services, Inc., Educational Division, Pleasantville, New York, 1960.

Treanor, John, *Exercises in English Grammar*, Books I and II, Educators' Publishing Service, Cambridge, Massachusetts.

Watson and Nolte, *A Living Grammar*, Sterling Publishing Company, New York, New York, Revised 1956.

Laubach Literacy, Inc., *News for You*, Editions A and B, Syracuse, New York.

For Reinforcement of Skills - Developed for MCPS

O'Connell, Mary Lou, *Worksheets for Adults - Let's Read Series*, Books 1-3, MCPS Program, Project for Adult Literacy, Boston, Massachusetts, 1966.

O'Connell, Mary Lou, and Orton, Von, *Worksheets for Adults - Let's Read*, Book 4, MCPS Program, Project for Adult Literacy, Boston, Massachusetts, 1967.

For Remedial Drill and/or Analysis of Specific Skill Deficiencies: Developed for the MCPS System

Drake, Charles (editor); Buchan, Reta; Johnson, Warren T; Shedd, Charles; Simpson, Bickley, *Read, Write and Spell* Students Manual and Teachers Manual, Massachusetts Council for Public Schools, Inc., Adult Literacy Project, Boston, Massachusetts, 1964.

O'Neil, Frances, *Comprehension Analysis Sheets for Adults - Let's Read*, Books 1-3, Massachusetts Council for Public Schools, Project for Adult Literacy, Boston, Massachusetts, 1966.

Smith, Esta Rita, *Student Alphabetic Order Worksheets*, MCPS Program, Project for Adult Literacy, Boston, Massachusetts, 1966.

______________, Series for Understanding the Structure of the English Language: MCPS Program, Project for Adult Literacy, Boston, Massachusetts, 1966.

From Supplementary Reading List*

Crane, C. H. and Hoyt, Bill, The Claw Hammer, The Reading Research Institute, Lexington, Massachusetts, 1966.

The Reading Research Institute, The Loan Shark, Lexington, Massachusetts, 1966.

TUTOR TRAINING - Developed for MCPS

Lyons, Nancy, Tutor's Guide to Gillingham Cards, MCPS Program, Project for Adult Literacy, Boston, Massachusetts, 1967.

Orton, Von, Guide to Gillingham Cards, MCPS Program, Project for Adult Literacy, Boston, Massachusetts, 1967.

__________, MCPS Procedures Guide, MCPS Program, Project for Adult Literacy, Boston, Massachusetts, 1968.

Smith, Esta Rita, Guide to the MCPS Adult Reading Program, MCPS Program, Adult Literacy Project, Boston, Massachusetts, 1965.

Kit for Tutors - (See Chapter IX for description).

* * *

EXCERPTS FROM MCPS PROCEDURES GUIDE

In lieu of more detailed description of the MCPS method, the following examples of procedural practices are presented.

TABLE OF CONTENTS

Screening Procedures

Sequence to be Followed at each Tutoring Session

Procedures for Specific Skill Instruction

A. Alphabetical order and related skills
B. Listening skills for beginning students

---

* Supplementary reading materials were available in the centers for instructional purposes or guided reading practice. The student "Interest Kits" described in Chapter IX were being introduced as well as selections from the growing body of publications designed for adults. The two above were developed in the Boston area. A co-author had been a tutor and supervisor in an MCPS center.

C. Handwriting skills (if needed)
D. Phonics
E. Spelling
F. Phrasing
G. Comprehension and vocabulary enrichment
H. Communication skills - grammar and punctuation
I. Communication skills - written composition
J. Communication skills - oral communication

* * *

SCREENING PROCEDURES

(Administered by Supervisors and/or Tutors, except where indicated)

Student fills out registration form, assisted by supervisor if necessary.

Administration of "Literacy Skills Test".

Tester-counselor begins administration of standard reading tests for research program.

Administration of "Monosyllable Test" to determine Bloomfield Let's Read level (Book 1, 2, 3, or 4) if prior tests indicate an advanced reading level.

Administration of Auditory Discrimination Check Sheets if indicated.

Administration of comprehension tests using supplementary reading materials and comprehension sheets. (McCall-Crabbs' "Test of Comprehension" is given where prior tests indicate an advanced reading level.)

Supervisor tutors the first session and makes recommendations in student diary for tutor.

* * *

MCPS PROCEDURES

SEQUENCE TO BE FOLLOWED AT EACH TUTORING SESSION

Introductory Talk
- Initial Stages: general conversation--getting acquainted
- Later Stages: general discussion of student interest, problems, etc.

SEQUENCE TO BE FOLLOWED AT EACH TUTORING SESSION (CONTINUED)

- The Gillingham Cards
  - Review of previously taught phonograms
  - Introduction of new phonograms
- Reading
  - The Let's Read Series (phonics)
  - Sight Vocabulary (non-phonetic words--street signs, job terms, etc.)
  - Supplementary reading for intermediate and advanced students
- Spelling
  - Dictation from the Let's Read Series
  - Grush Manual for intermediate and advanced students
- Writing
  - Formal training--in forming letters, if needed.
- Comprehension
  - Beginning Student--simple one word answers
  - Advanced Student--summarization of content
- Grammar and Punctuation
- Conversation
  - Student-Tutor Dialogue
  - Unstructured: Coffee Break
  - Structured: Group Sessions
- Practical Skills
  - Writing student's name, address
  - Filling out application
  - Telling time
  - Learning driving rules, etc.
- Summation of Evening's Progress
  - Tutor goes over material.
  - Tutor indicates areas of progress.

* * *

PROCEDURES FOR SPECIFIC SKILL INSTRUCTION

ALPHABETICAL ORDER AND RELATED SKILLS

- Beginning Student
  - Materials: Gillingham Cards and Student Alphabetic Order Work Sheets
  - Instruction
    1) Tutor explains alphabetic system.
    2) Tutor puts Gillingham Cards in alphabetic order (5 at a time).
    3) Tutor directs student to put the cards in the same order .

ALPHABETICAL ORDER AND RELATED SKILLS (CONTINUED)

4) Tutor asks student to say aloud the sequence being taught.
5) Tutor asks student to write the sequence.

Reinforcement - Student Alphabetic Order Worksheets

Intermediate and Advanced Student

Materials: Dictionary and Telephone Book

Instruction

1) Tutor instructs student in use of alphabetical order to locate dictionary entry words.
2) Tutor instructs student in use of guide words to locate entry words.
3) Tutor instructs student in use of alphabetical order to locate names in telephone books, city directories, etc.

* * *

COMMUNICATION SKILLS: WRITTEN COMPOSITION

Beginning Student

Materials: Let's Read, 1, 2, 3 and O'Connell Worksheets

Instruction:

1) Tutor teaches student simple sentence structure using Let's Read 1, 2, 3 words.
2) Tutor uses O'Connell Worksheet sentence structure lessons and word & sentence mimeo sheet for reinforcement.

Intermediate Student

Instruction: Composition stresses ideas and interests important to the student and is written in his style and language. Grammar is not stressed.

1) Tutor continues sentence structure instruction with emphasis on more complex sentence patterns.
2) Tutor initiates work in creative composition.

Letter writing--using models
Diary keeping
Thought writing
   1) Reading summaries
   2) Writing about a picture (example: magazine picture)

COMMUNICATION SKILLS: WRITTEN COMPOSITION (CONTINUED)

Advanced Student
Instruction: Tutor assists student with creative composition.

Letter writing--using models
Diary keeping
Summaries of stories and articles
Original story endings
Thought writing
Descriptive writing, (examples: about self, one's job)

* * *

APPLIED LITERACY SKILLS

List developed from needs indicated by the Projects' adult students.

1. Writing name and address.
2. Recognizing signs: street signs, subway signs, "Men", "Women".
3. Making change.
4. Telling time.
5. Writing checks.
6. Using telephone and other directories.
7. Using dictionaries.
8. Using catalogues.
9. Registering to vote.
10. Reading menus.
11. Filling out grocery lists.
12. Using recipes.
13. Reading labels: paint can labels, grocery packages, medicines.
14. Filling out applications.
15. Using trade manuals.
16. Recording job-related information.
17. Taking orders for coffee breaks at work.
18. Using filing systems: office, library.
19. Studying textbooks.
20. Taking exams.
21. Using Driver's Instructional Manual.
22. Traffic Signs such as "Detour", "No Left Turn", "Don't Walk".
23. Reading childrens' books to children.
24. Helping children with homework.
25. Reading and writing letters, or notes in the home or at work.
26. Reading at religious services.

PROJECT RESOURCES EMPLOYED IN TUTORIAL TRAINING

Summarized below from an operations memorandum are some of the activities involved in the preparation and implementation of MCPS tutorial training courses. Variations, in numbers of trainees, in location for the training sessions, and in course materials emphasized, were among factors controlling the extent of time required of the Project staff.*

Activities required in the preparation for a tutorial included:

1) Arrangements for location
2) Notification of previous applicants
3) Publicity and recruitment activities when needed.
4) Preparation of "Kits for Tutors" including: duplication of materials, purchasing of publications and supplies, assembling

Staff assignments made for varied responsibilities included such activities as: speaking...teaching...serving... transporting materials...registering enrollees... distribution of tutor kits and collection of loan receipts...keeping attendance records...processing registrations...processing preferences for center assignments...assignment of tutors to centers.

Necessary follow-up activities included:

1) Arrangements for make-up sessions
2) Full written report upon completion of tutorial.
3) Follow-up of trained tutors who failed to appear at the assigned center, to promote their appearance or the return of the kits
4) Follow-up one to two months later for information on drop outs, and efforts to alleviate problems such as lack of transportation.

Personnel involved varied with the size of the tutorial, but usually included four to eight or ten of the following:

1) Director of the Project
2) Associate for Operations
3) Head Supervisor
4) Educational specialist or assisting supervisors
5) Secretariat
6) Research staff members
7) Extra clerical assistance

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* In Chapter IX, pages IX-24 ff. and IX-40 ff. additional information regarding tutorials and their variation is presented.

APPENDIX K

LITERACY CENTERS

Arlington Street MCPS	Arlington Street Church 355 Boylston Street Boston, Massachusetts
Columbia Point RHG/MCPS	The Columbia Point Community Center 20 Montpelier Road, Apt. 1193 Columbia Point Dorchester, Massachusetts
First Church MCPS	First Church in Roxbury 14 John Eliot Square Roxbury, Massachusetts
Hilltop MCPS	Hilltop Day Care Center 344 Blue Hill Avenue Roxbury, Massachusetts
Jamaica Plain RHG	Bromley Heath Community Hall 80-90 Bickford Street The Golden Age Club Bromley Heath Jamaica Plain, Massachusetts
Malden RHG/MCPS	First Congregational Church of Malden 184 Pleasant Street Malden, Massachusetts
NEC	Neighborhood Employment Center ABCD 345 Blue Hill Avenue Roxbury, Massachusetts
Prudential/NAACP RHG/MCPS	The Prudential Tower 3rd Floor Cafeteria Huntington Avenue Boston, Massachusetts
Quincy RHG/MCPS	Quincy High School Basement Coddington Street Quincy, Massachusetts
St. Stephen's (Spanish Speaking) MCPS	St. Stephen's Episcopal Church 411 Shawmut Avenue Boston, Massachusetts
Shaw House MCPS	Robert Gould Shaw House, Inc. 612 Blue Hill Avenue Dorchester, Massachusetts

LITERACY CENTERS

(continued)

South End MCPS	South End Settlement House 48 Rutland Street Boston, Massachusetts
T.B. Sanatorium RHG	Boston City Hospital, Sanatorium Division Library 249 River Street Dorchester, Massachusetts

APPENDIX L

PROFESSIONAL PERSONNEL

The following persons participated in the work of the Project at some time during the periods of government support.

Central Administrative Personnel:

Atkinson, John
Blackett, Joan
Cranker, Glenn
Dulay, Heidi
Fitzsimons, Claire
Kirkland, Virginia
Krebs, Annette
McCarthy, Edward J.
Mercer, Michele
Popalis, Christine
Rizzo, Roberta
Traynor, Rosamond
Srinivasan, Lyra
Steinmetz, Phyllis
Warsowe, Edna Koretsky
Weinstein, Stanley D.

Central and Field Research Personnel:

Baird, Carol
Budoff, Milton
Caroselli, Annette
Chedekel, David
Craig, Richard
Cutler, Jane
Davis, Marcia
Eltman, George
Friedman, Joel
Gambino, Lawrence F.
Goldberg, Sandra
Goldner, Virginia
Greenberg, Gail
Guberman, Deborah
Lester, David
McCoy, Gene
Morant, Ricardo B.
Mrosyzk, Rose
Newman, Jeffrey
Pekarsky, Davida
Sampson, Robert
Schnall, Melvyn
Smith, Michele
Sykes, Jeremy
Young, Henry
MacVicar, John

RHG Teaching and Supervisory Personnel:

Bauman, Saul
Creedon, John
Davies, Catherine
Davies, James P.
Every, George
Held, Linda
Malvesta, Daniel
McGee, Vincent B.
Nelson, Leon
Nelson, Roxanna M.
Nichols, Lisbeth
Nichols, Timothy
Queally, Robert
Ricker, Elizabeth
Ruma, Santo

PROFESSIONAL PERSONNEL (CONTINUED)

MCPS Supervisory Personnel:

Aranov, Florence
Atcheson, Rita
Austin, Rachel E.
Barron, Kay
Biederman, Suzanne
Burke, Joseph
Caines, Regina
Cerier, Miriam
Coleman, Jacqueline
Dillon, Carmen
Feinberg, Lottie
Francis, Robert
Giffen, Marjorie
Grush, Helen
Hoyt, William B.
Kahn, Linda
Kiley, Patricia
Lyons, Nancy
Matthews, Yvonne
McDavitt, Gail
McGlaston, Joyce
Mellett, Thomas
Morse, Deanne
Murphy, Joanne
Murphy, John E.
Murphy, Marjorie
Natalé, Pauline
O'Connell, Mary Lou
O'Connor, James
O'Neil, Francis
O'Neil, Robert
Orton, Von
Pearlman, Joan
Proulx, Joanne
Reichert, Abraham
Romanow, Carol A.
Rosenblum, Earl
Sardella, Louis
Selling, Mary Lee
Smith, EstaRita
Stearns, Sally
Taylor, Elizabeth
Tilson, Renate
White, Donald
Young, Sally

EPILOGUE

"Now I know I'm not stupid."

...Students
Project for Adult Literacy
Boston, Massachusetts

ERIC Clearinghouse
APR 6 1970
on Adult Education